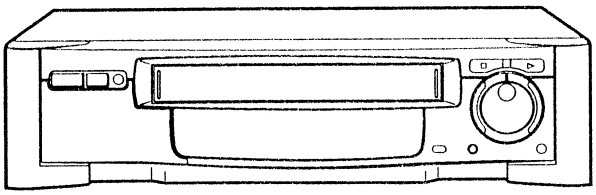
1995

MITSUBISHI

# Service Manual

VIDEO CASSETTE RECORDER

VHS
PAL



MODEL

**HS-541V(B)**
**HS-541V(E)**
**HS-541V(G)**
**HS-541V(IR)**
**HS-541V(SA)**
**HS-541V(Y)**

Only cassettes marked VHS can be used with this video cassette recorder.

## SPECIFICATION

| | |
|---|---|
| **Tape Format** | : VHS 1/2" high-density video cassette tape |
| **Power Source** | : AC 230V ; 50Hz |
| **Power Consumption** | : Approx. 25W |
| **Television System** | : 625lines, 50fields<br>System CCIR B&G PAL [E/Y/G]<br>System CCIR I PAL [B/IR/SA] |
| **Video Recording System** | : Azimuth helical scanning system |
| **Luminance** | : Frequency modulation recording |
| **Colour Signal** | : Low frequency conversion subcarrier phase shift recording |
| **Linear Audio Track** | : 1 track |
| **Tape Speed** | : 23.39mm/sec (PAL SP mode)<br>11.70mm/sec (PAL LP mode) |
| **Record/Playback Time** | : 240min. with E-240 cassette (PAL SP mode)<br>480min. with E-240 cassette (PAL LP mode) |
| **Heads: Video** | : 4 rotary heads |
| **Audio/Control** | : 1 stationary head |
| **Erase** | : 1 full track head |

| | | |
|---|---|---|
| **Video Input** | | : 0.5 to 2.0Vp-p, 75Ω unbalanced EURO AV socket |
| **Audio Input: Line** | | : –8dBs, 50kΩ unbalanced EURO AV socket [B/E/IR/SA]<br>–8dBs, 10kΩ unbalanced EURO AV socket [Y/G] |
| **Video Output** | | : 1.0Vp-p, 75Ω unbalanced EURO AV socket |
| **Audio Output** | | : –6dBs, 1kΩ unbalanced EURO AV socket |
| **TV Tuner** | **VHF** | : 47~68MHz, 104~300MHz [E]<br>44~89MHz, 104~300MHz [IR]<br>47~118MHz, 174~230MHz[Y, G]<br>174~230MHz, 246.18~254.18MHz[SA] |
| | **UHF** | : 470~862MHz [All] |
| **Operating Temperature** | | : 5°C to 40°C |
| **RF Channel Output** | | : Set to Channel 36 (Channel 32~40 selectable) |
| **Weight** | | : Approx. 5.3kg |
| **Dimensions** | | : 380(W)×94(H)×334(D)mm |
| **Timer** | | : 8 programmes for any channels in one month/every day/every week day<br>24 hour digital synchronized with oscillator frequency. |
| **Channel Selection** | | : 60 position Up/Down + EXT |
| **Deck** | | : J Deck |

- Weight and dimensions shown are approximate.
- Design and specifications are subject to change without notice.

MITSUBISHI ELECTRIC

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# DISASSEMBLY

**Note:** Any screw can be used between silver screw securing the boss of the moulded parts and 669D220030 (preferred part) for replacement because they are compatible with each other.

## 1. Removal of Top Cover

① Remove the two Top Cover fastening screws (ⓐ and ⓑ) shown in Fig. 1 and remove the Top Cover in the direction shown by the arrows.

## 2. Removal of Front Panel

① Remove the Top Cover.
(Refer to Para. 1 of the DISASSEMBLY.)
② Remove the Jog Dial and the Shuttle Ring.
③ Unfasten seven catches (ⓒ~ⓘ), two on the top, two on the side, and three on the bottom, and remove the Front Panel in the direction shown by the arrows.

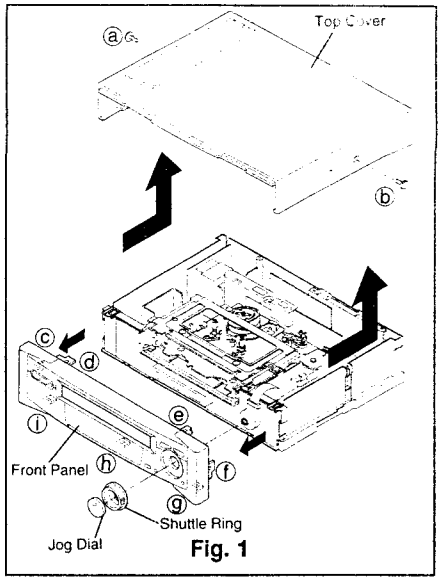


Fig. 1

## 4. Removal of Bottom Panel

① Remove five fastening screws (ⓐ~ⓔ) shown in Fig. 3.

② Push the two inside hooks (ⓕ and ⓖ), holding the Bottom Panel and slide the Bottom Panel toward the rear to remove it.

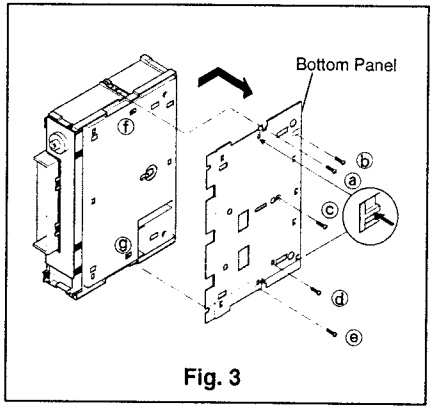



Fig. 3

## 5. Removal of Assy Deck

① Remove the Top Cover.
(Refer to Para. 1 of the DISASSEMBLY.)

② Remove the barrier.
(Refer to Para. 3 of the DISASSEMBLY.)

③ Remove the three fastening screws (ⓐ,ⓑ and ⓒ) on the bottom of the set shown in Fig. 4.

④ Remove the five screws (ⓓ~ⓗ) holding the Assy Deck, shown in Fig. 5, and disconnect the connectors [ML], [MM] and [ME].

⑤ Slowly raise the Assy Deck upward to remove it.

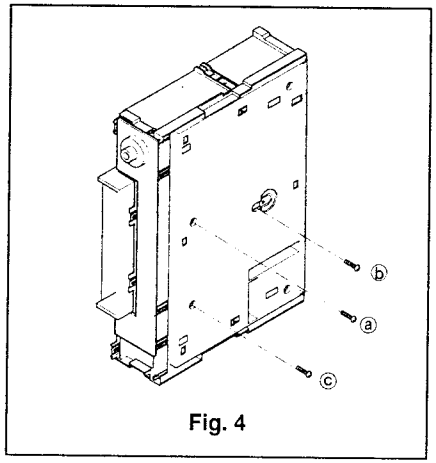



Fig. 4

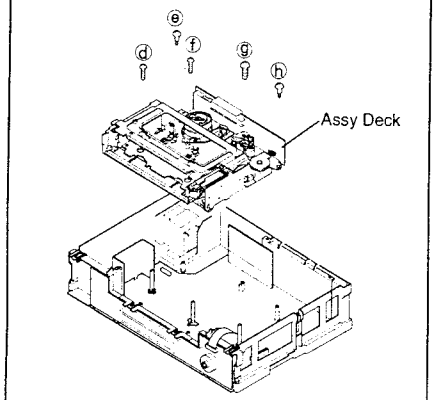



Fig. 5



# HOW TO EXECUTE CIRCUIT BOARD SERVICE

**CAUTION:**
**BEFORE ATTEMPTING TO REMOVE OR REPAIR ANY PCB, UNPLUG THE POWER CORD FROM THE A.C. SOURCE.**

## LOCATION OF PRINT CIRCUIT BOARDS

**Note:**

- Take caution when removing flat cables to prevent any contact problem.
- Connect and disconnect the flat cables at right angles to the connector and make sure that it is completely secured.
- After servicing the PCB, restore the flat cable and leads to their former state.

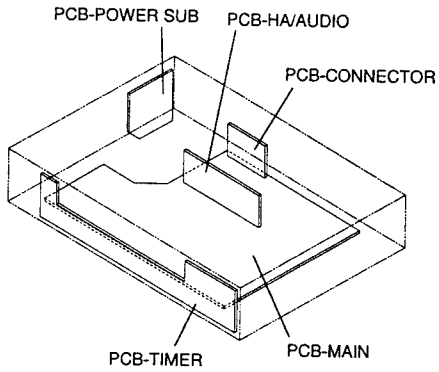



Fig. 6

## 1. PCB-MAIN

① Remove the Top Cover.
(Refer to Para. 1 of the DISASSEMBLY.)

② Remove the barrier.
(Refer to Para. 3 of the DISASSEMBLY.)
Servicing on the components side is partially possible.

③ Remove the Front Panel.
(Refer to Para. 2 of the DISASSEMBLY.)
Remove eight fastening screws referred to as ③ and ④ in Para. 5 of the DISASSEMBLY. (Do not disconnect the connector [ML], [MM] and [ME].)

④ Raise the front side of the Assy Deck upward as shown in Fig. 7 and support it with a screw driver, etc. Servicing on the components side of the PCB is now possible.

⑤ If necessary to remove PCB-MAIN completely, remove the Assy Deck. (Refer to Para. 5 of the DISASSEMBLY.) Remove all connectors on the PCB-MAIN. Remove one fastening screw (ⓐ) on the bottom and two fastening screws (ⓑ and ⓒ) on the Antenna Cover shown in Fig. 8. Raise the PCB-MAIN upward to remove it.

⑥ To service the component side, remove three screws (ⓐ, ⓑ and ⓒ: 669D222090) retaining the Heat Sink shown in Fig. 9.

**CAUTION:** Power regulators are damaged if the power supply is turned on without the Heat Sink installed.

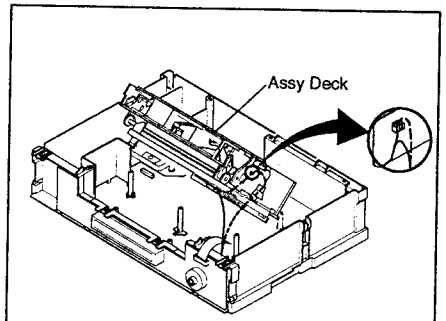



Fig. 7

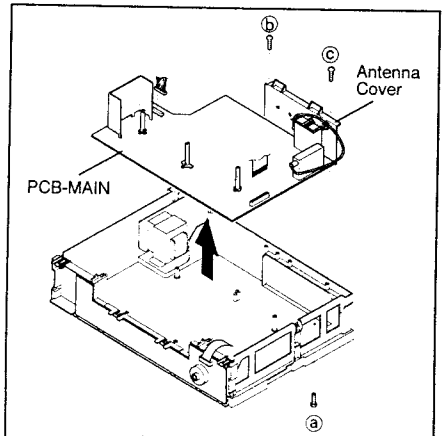



Fig. 8

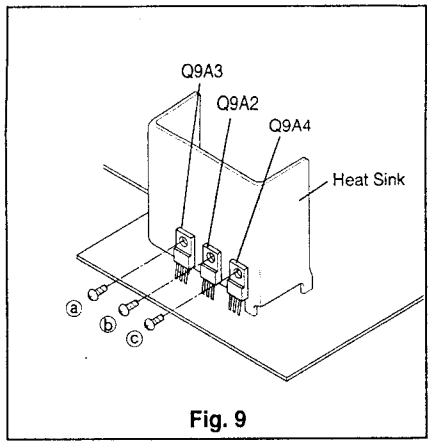



Fig. 9

## 2. PCB-CONNECTOR

① Remove the Top Cover.
(Refer to Para. 1 of the DISASSEMBLY.)
② Remove the Barrier.
(Refer to Para. 3 of the DISASSEMBLY.)
③ If it is necessary to remove the PCB-CONNECTOR comply with the following steps.
(1) Remove the PCB-MAIN.
(Refer to the preceding paragraph.)
(2) Remove four screws (ⓐ,ⓑ,ⓒ and ⓓ), unfasten five catches (ⓔ~ⓘ) on the Antenna Cover as shown in Fig.10, and remove the Antenna Cover.
(3) Raise the PCB-CONNECTOR upward to remove it.

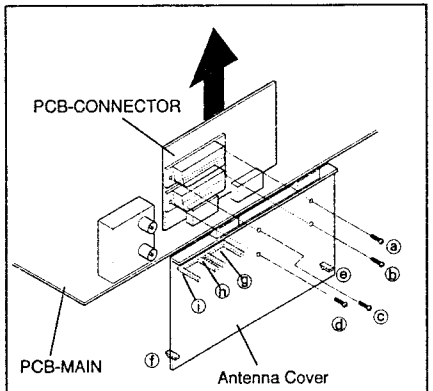



Fig. 10



## 3. PCB-TIMER

① Remove the Top Cover.
(Refer to Para. 1 of the DISASSEMBLY.)
② Remove the Front Panel.
(Refer to Para. 2 of the DISASSEMBLY.)
③ Remove five catches (ⓐ~ⓔ), shown in Fig. 11, then remove the PCB-TIMER.
④ Remove three catches (ⓐ, ⓑ and ⓒ), shown in Fig. 12 to remove the Jog.
⑤ Remove three catches (ⓓ, ⓔ and ⓕ), and remove the Holder Jog shown in Fig. 12.

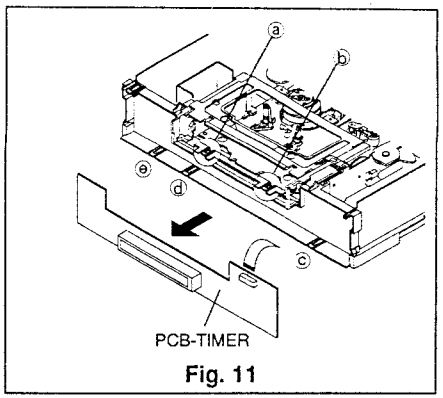



Fig. 11

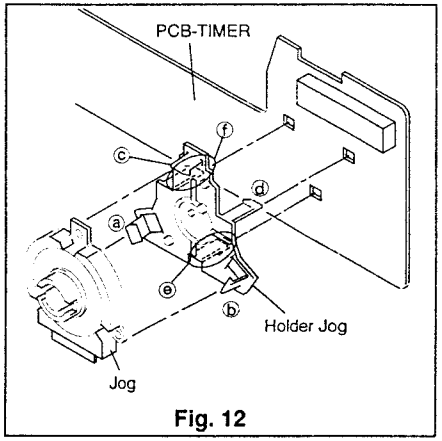



Fig. 12

## 4. PCB-HA/AUDIO

① Remove the Top Cover.
(Refer to Para. 1 of the DISASSEMBLY.)
② Remove the barrier.
(Refer to Para. 3 of the DISASSEMBLY.)
Servicing on the copper side is possible.
③ If necessary, remove the Assy Deck.
(Refer to Para. 5 of the DISASSEMBLY.)
Raise the Shield Cover upward to remove it. Disconnect three terminals (ⓐ,ⓑ and ⓒ), remove three fastening screws (ⓓ,ⓔ and ⓕ) shown in Fig. 13. Disconnect the connectors of Head FE, A/C Head, and Motor CP then remove the PCB-HA/AUDIO.

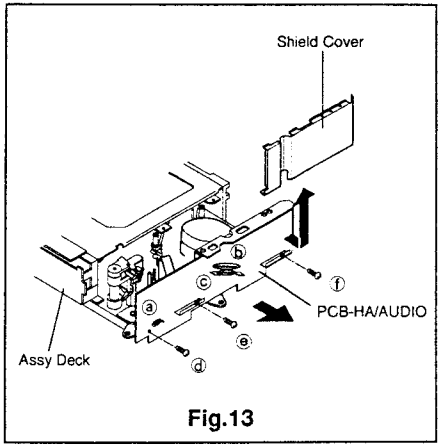



Fig.13

## 5. PCB-POWER SUB

① Remove the Top Cover.
(Refer to Para. 1 of the DISASSEMBLY.)
② Remove the barrier.
(Refer to Para. 3 of the DISASSEMBLY.)
③ Remove the holder of AC power cord from the Base Chassis shown in Fig. 14.
④ Disconnect connectors BB ( for the Power receptacle) and MD on the PCB-POWER SUB.
⑤ Remove one fastening screw (ⓐ) on the bottom, shown in Fig. 14, and two screws (ⓑ and ⓒ : 669D221O40). Hold the transformer, and raise the PCB-POWER SUB to remove it.

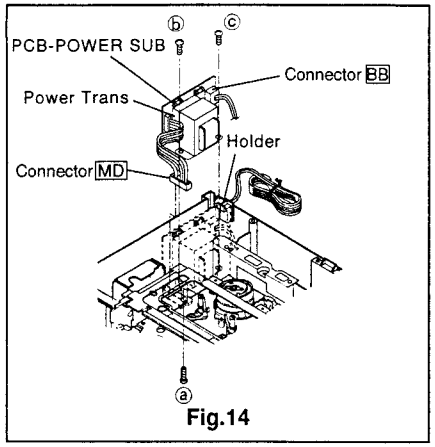
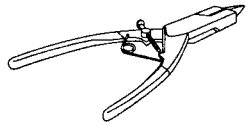
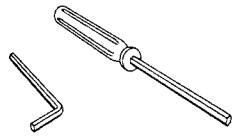
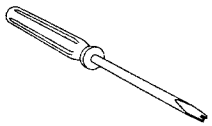
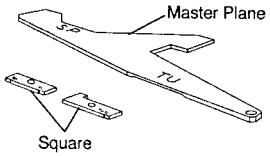
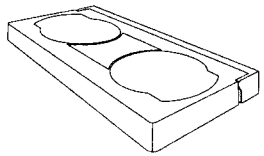
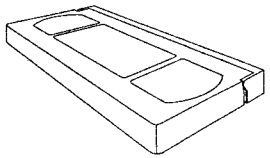


Fig.14

## MECHANICAL ADJUSTMENT TOOLS

| | PURPOSE | METHOD |
|---|---|---|
| **Grip ring fixer (859C347O50)**  | A tool for preventing the grip ring from opening excessively. | Opening the grip ring with the tips of this tool, install the grip ring on to the shaft. |
| **Hex Keys(1.5mm)**  **(859C259O20) (859C259O50)** | The hex keys are used for tightening or removing hexagonal socket head screws which fasten the guide rollers. | Insert the given size(1.5mm) hexagonal socket and turn. |
| **Adjustment Driver (859C259O80)**  | For adjustment of guide rollers. | Carefully insert and adjust guide rollers. |
| **Height adjusting Jig**<br>**•Master Plane (859C342O20)**<br>**•Square (859C341O70)**   | The master plane and the square are used for measuring height and perpendicularity of the reel disk and Takeup guide arm. | The gauge is applied to the part being measured. |
| **Back Tension Gauge (859C345O80)**  | The back tension gauge is used for measuring the tension of the tape on the supply side. | Load this gauge in the cassette housing and run in the play mode. Read the gauge indicator. |
| **Cotton gloves** | For changing, cleaning and handling of drum, heads and guides. | Use when handling all parts in the tape path. |
| **Grease**<br>**PG641 (859D055O30)**<br>**G (859D055O50)**<br>**MULTEMP SH-M (859D055O60)** | Lubrication of various parts. | To be applied as specified. |

# ELECTRICAL ADJUSTMENT TOOLS

| | PURPOSE | METHOD |
|---|---|---|
| **Adjustment Driver (859C338O00)**<br>767-M<br> | The adjustment driver is intended to adjust variable resistors, trimmers, transformers etc.in the circuitry. | Select a tip suitable for the particular head of the component concerned and adjust. |
| **Alignment Tape**<br>**(PS-2 :859C339O10)**<br>**(PM6KH3 :859C339O30)**<br>**(PM3KE6(CH1) 25 :859C568O50)**<br>**(PMX :859C568O70)**<br>  | Standard signals(VHS Standard) are recorded on the alignment tape and reproduced when required in the adjustment of Y/C circuit, audio circuit and interchangeability alignment. | Install and run in the play mode, the same as for an ordinary tape. |



## HOW TO INITIALIZE THE E²PROM

The E²PROM is not initialized before shipping, so the E²PROM must be initialized when replaced.

**Initialize the E²PROM by following the steps below.**

1. Set the VCR to "CLOCK SET" mode.
2. Push **COUNTER RESET** button on the remote hand unit for 8 seconds.

## VCR OPERATION IN SERVICE POSITIONS [B] AND [C]

Refer to page 10 for Service Position Information.

### ■ To activate PB, REC, FF or REW Mode (Service position [B] only)

- Cover the END SENSOR first then START SENSOR with an infra-red opaque material e.g. black vinyl tape etc..
- The reel sensor must provide input "rotating" signals to the microprocessor. To provide a dummy reel rotating signal, connect TP2H to TP5J8 on PCB-MAIN.

**CAUTION:**

Because the Start and End sensors are disabled there will be a risk of END of TAPE damage in REW and FF Modes.

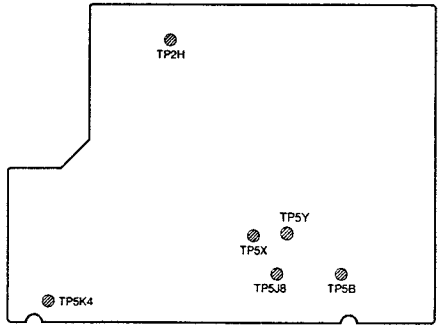
### ■ Ejecting a tape

When TAPE EJECT is necessary, disconnect the main supply and reinstall the DECK ASSY to the Service Position [A], restore power then EJECT the tape.

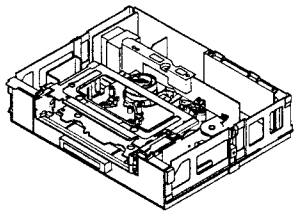
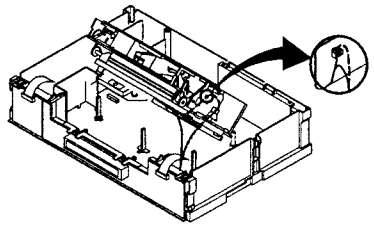
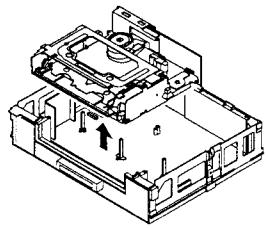
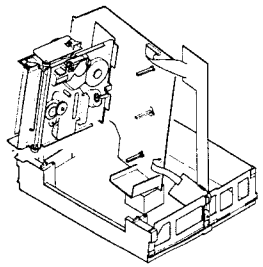
### ■ Record Protection Method

- To protect TEST TAPE(s) from accidental Recording (erasure) during testing, connect TP5B (STBY 5V) to TP5K4 on PCB-MAIN .

**PCB-MAIN(Component side)**



When replacing parts or performing service adjustments, place the unit in the service positions shown below. Refer to page 9 for additional information about Service Positions.

| Service Position | Service Item |
|---|---|
| (A)  | • Remove the top cover and the front panel.<br>(1) Worn parts on the deck (upper drum, pinch roller assembly, A/C head, and FE head) can be replaced.<br>(2) Checks at test points may be made to isolate a problem to a specific circuit. |
| (B)  | • Unfasten the clamper securing ML lead wire on the desk.<br>• Remove the screws holding the deck, raise the front of the deck upward, and hold it in place with a screw driver, etc.<br>(1) Worn parts on the deck (reel belt, idler assembly, and capstan motor) can be replaced.<br>(2) The performance of the deck can be checked.<br>• The REC safety switch does not operate in position (B).<br>• Set the deck to service position (A) and load the cassette tape. Then turn the power off and set the deck to service position (B). Cover the start and end sensors, and short-circuit test points TP2H to TP5J8. Turn the power on and play the tape. (Do not use the start or end portion of the tape.)<br>• If it is necessary to eject the tape, turn the power off and set the deck to the service position (A). Turn the power on again and eject the tape. |
| (C)  | • Remove the screws holding the deck and disconnect the deck from the connector.<br>(1) Parts on the deck (drum assembly, PCB-HA/AUDIO etc.) can be replaced.<br>(2) The EE picture can be displayed with the deck removed by short-circuiting TP5X to TP5Y. (Short-circuit before turning the power on.) (Playback and recording operation can not be checked.) |
| (D)  | • Remove the PCB-TIMER/OPE.<br>• Remove the deck with the PCB-MAIN attached.<br>• Position insulating cushions as, shown in Figure D, supporting the supply side of the Cassette Housing, the Deck Base and the PCB-MAIN.<br>**Note**<br>Take care that the Deck, PCB-MAIN and inter connecting leads DO NOT touch the Power Transformer or the heat sink.<br>(1) The foil side of the PCB-MAIN can be serviced in this position.<br>* If the bottom cover is removed, IC5A0 and IC4A0 are accessible for service. |



# Electrical Adjustments

Perform only the alignments required. If proper equipment is not available,do not attempt an alignment.

## ■ PRE-ADJUSTMENT SETTING

- Set the "COLOUR SYSTEM" to "PAL" mode in the MENU. ( Only HS-541V(Y), (E), (G))
- Set the "TAPE OPTIMIZER" to "OFF" mode in the INITIAL SET-UP of MENU.
  (Only HS-541V(Y), (B), (E), (IR), (SA))
- Set the "BAND-OPTIMIERUNG" to "OFF" mode in the INITIAL SET-UP of MENU. (Only HS-541V(G))
- Set the "RENTAL PB" to "OFF" position.

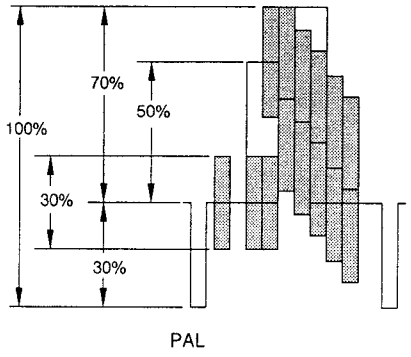
## ■ MEASURING EQUIPMENT AND JIGS

- Oscilloscope (10:1 unless 1:1 specifird.)
- Frequency counter
- Audio tester
- Electrical tools

## ■ TEST SIGNAL

**Colour bar signal**

In this manual, unless otherwise specified in particular, use colour bar signal in specifications below.

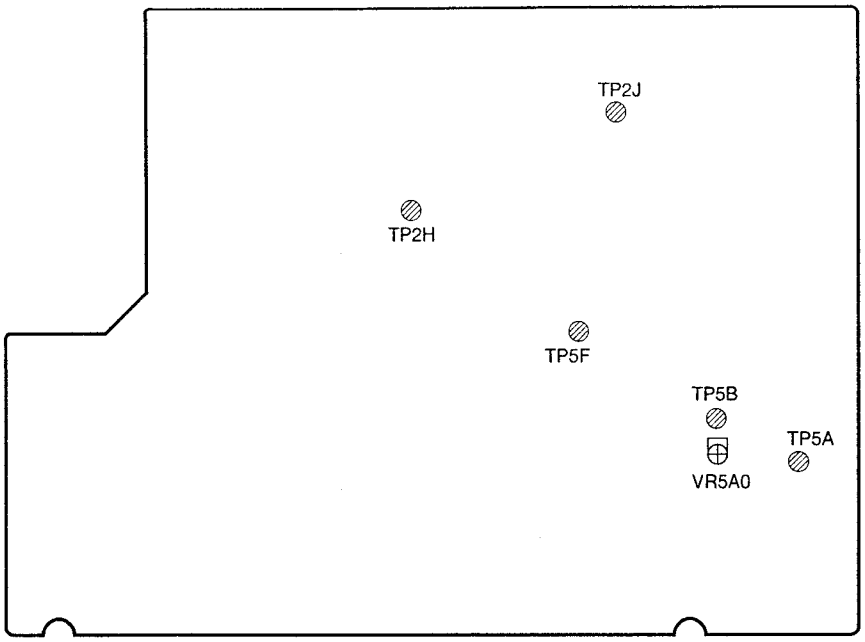



**Split-Field colour bar(with 100% window)**

# LOCATIONS

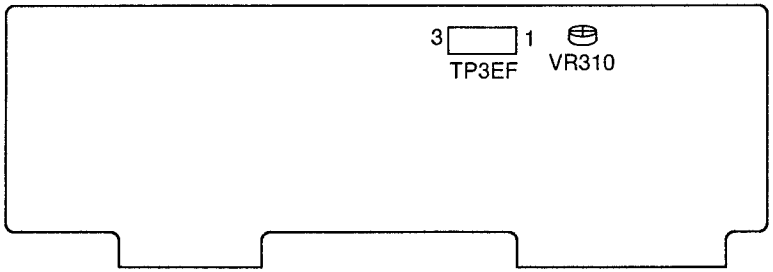
## PCB-MAIN (Component side)

REAR




## PCB-HA/AUDIO (Component side)

TOP






**[ Servo circuit ]**
1.Playback Switching Point

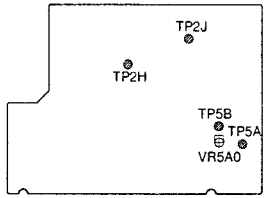
**Adjustment purpose** Video switch over timing during playback.

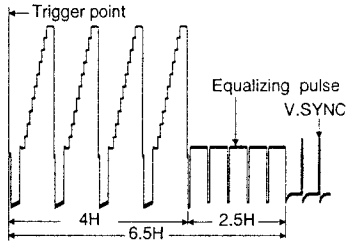
**Symptom when incorrectly adjusted** Switching noise or jitter in the playback picture.

| Measuring instrument and condition | | VCR set up condition | |
|---|---|---|---|
| Oscilloscope | | Input signal | – – – |
| Test point | TP2J | Using tape | Alignment tape (PS2, stair step) |
| EXT trigger | TP2H | VCR condition | Playback |
| Measurement range | DIV 20mV TIM 50µs | Using Jig | – – – |

1. Playback an alignment tape (PS2, stair step).
2. Short-circuit TP5A to TP5B. Confirm that the "DTR" displayed in Fluorescent Display flashes fast.
3. Observe the waveform at TP2J.
4. Set the oscilloscope's slope to (–).
5. Adjust VR5A0 so that the trigger point is located at 6.5±1.0H before the vertical synchronizing signal.

**PCB-MAIN (Component side)**




**[ Audio circuit ]**
2.Audio Bias Level

**Adjustment purpose** Audio bias level during recording.

**Symptom when incorrectly adjusted** Poor audio response at high frequency.

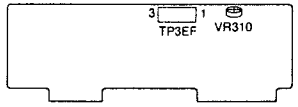
| Measuring instrument and condition | | VCR set up condition | |
|---|---|---|---|
| Audio tester | | Input signal | – – – |
| Test point | TP3EF (pin ① and pin ③) | Using tape | A tape |
| EXT trigger | – – – | VCR condition | SP REC |
| Measurement range | – – – | Using Jig | High pass filter |

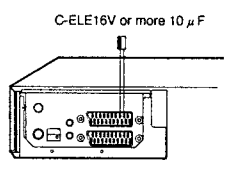
1. Supply no signal.
2. Short-circuit EURO AV socket pin ② (AUDIO IN) and pin ④ (GND) using an electrolytic capacitor (16V or more 10µF).
3. Set the VCR to SP REC mode.
4. Observe the audio level at TP3EF (pin ① (GND) and pin ③) with an Audio Tester using a high pass filter.
5. Confirm that the monitor TV etc. does not affect the indication of the audio tester and then adjust VR310 so that the level is 2.6mVr.m.s.

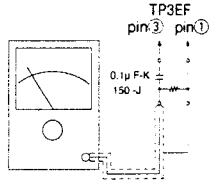
**Note 1:** Be careful that the audio tester housing does not touch the VCR chassis.

**Note 2:** Never set the VCR to Play mode with the audio tester connected.
(The audio amplifier will be over loaded.)

**PCB-HA/AUDIO (Component side)**



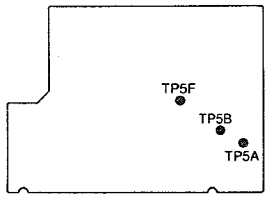



| [ Timer circuit ]<br>3. Clock Frequency Correction | **Adjustment purpose** To set the accuracy of clock.<br>**Symptom when incorrectly adjusted** Poor clock accuracy. |
|---|---|

| Measuring instrument and condition | | VCR set up condition | |
|---|---|---|---|
| Frequency Counter | | Input signal | - - - |
| Test point | TP5F | Using tape | - - - |
| EXT trigger | - - - | VCR condition | Power off |
| Measurement range | - - - | Using Jig | - - - |

1. Set the VCR to the EJECT position. (with the tape ejected from the VCR)
2. Short-circuit TP5A to TP5B.
3. Observe the frequency at TP5F.
4. Be certain that the frequency is between 262.1000 ~ 262.1882kHz.
5. Use the number buttons on the remote hand unit to enter the last three digits of the frequency counter reading (262.1ⓐⓑⓒkHz). Enter the digits in ⓐⓑⓒ sequence.
6. Push the REC button on a remote hand unit.
7. Open-circuit TP5A to TP5B.

**PCB-MAIN (Component side)**






# MECHANICAL ADJUSTMENT AND REPLACEMENT

## 1.Cleaning of Deck

The following parts require cleaning whenever serviced to maintain satisfactory performance.

### 1-1 Video Head

A.Clean the video heads by the following method. Dust and other foreign objects on the video heads disturbs the normal playback picture:
Dampen a video head cleaning cloth with alcohol. Hold the cloth against the drum and turn the drum slowly counterclockwise to clean.

**NOTE:**
Do not directly touch the head attached to the upper drum. The head is very hard but brittle to impact, especially in the vertical direction.
Do not apply force in the vertical direction.

B.Allow residual alcohol to dry thoroughly before running a tape. Otherwise, the liquid may stick to and damage the tape.

### 1-2 Tape Transport (Refer to Fig. 1-1.)

Clean the following parts of the tape transport.

1.Tension arm
2.Supply guide pole
3.FE head
4.Supply slant pole
5.Upper and lower drum
6.Takeup slant pole
7.A/C head
8.Takeup guide pole
9.Capstan shaft
10.Takeup guide arm
11.Supply guide roller
12.Takeup guide roller
13.Pinch roller

A.Clean the tape transport using gauze dampened with alcohol,except the supply guide roller, takeup guide roller and pinch roller. If the Guide rollers and pinch roller are stained with dust,clean them with dry gauze or replace them with new parts.

B.Allow residual alcohol to dry thoroughly before running a tape. Otherwise the liquid may stick to and damage the tape.

### 1-3 Reel Disk Drive System

Clean the reel disk braking surfaces and the reel belt.

A. Clean the reel disk braking surfaces with gauze dampened with alcohol.
- After the alcohol dries completely, perform "Adjustment of Back Tension and Tension pole Position" (Item 3-1).

B. If the Reel belt is stained with dust, clean it with dry gauze or exchange it for a new part.

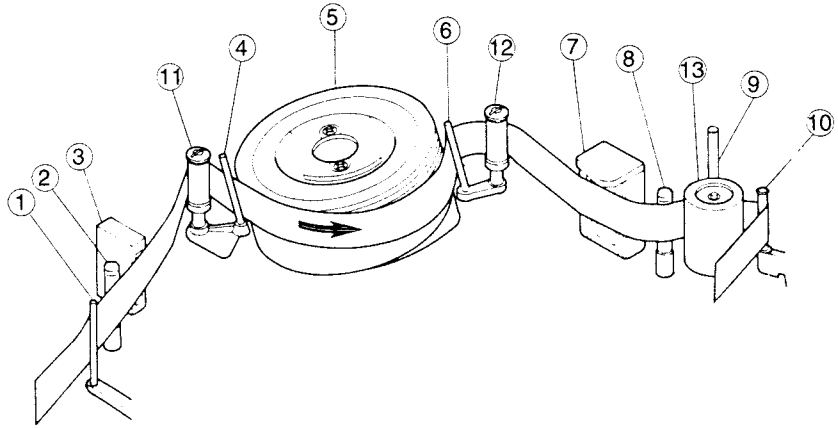



**Fig. 1-1**

## 2. Replacement of Major Parts

### 2-1 Cassette Housing

(Removal)

① Set the VCR to the eject mode.

② Remove the top cover and the front panel.

③ Unfasten the clamp holding the lead of the loading motor, which is attached to the side plate of the cassette housing. Unscrew the two cassette housing fastening screws (ⓐ and ⓑ). Slowly raise the cassette housing in the direction shown by the arrow. (Refer to Fig. 2-1-1.)

(Installation)

① Make sure that the holes (matching mark M) on the body and cogwheel of the mode switch align with each other as shown in Fig. 2-1-2. At the same time confirm that the hole of the gear pinch aligns with the matching marks of the gear joint J and the ▽ mark on the mode switch cogwheel,refer to Fig. 2-19-5. This indicates the J deck is in the EJECT mode.

② If the deck is not completely set to the eject position, turn part A of the pulley worm J by hand to set the eject position. (Refer to Fig. 2-1-4)
Turn in the direction a ·····for loading
Turn in the direction b ·····for unloading

③ Slowly lower the cassette housing onto the main plate of the deck.

④ Make sure the record safety lever enters between the insert guide of the cassette housing and the shaft as shown in Fig. 2-1-3. Align the four points (ⓒ, ⓓ, ⓔ and ⓕ), located on the bottom of the housing with the matching holes in the deck. Secure the cassette housing on the deck with the two screws (ⓐ and ⓑ). (Refer to Fig. 2-1-1.)

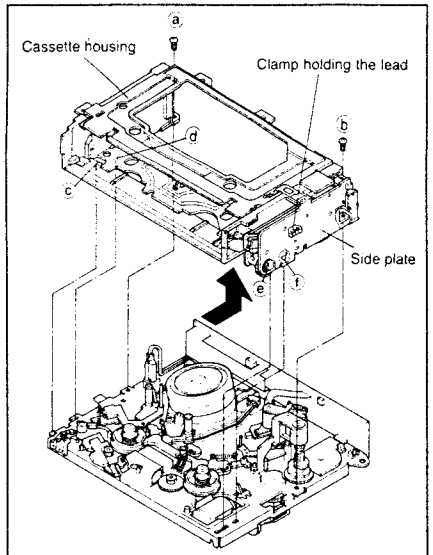



Fig. 2-1-1

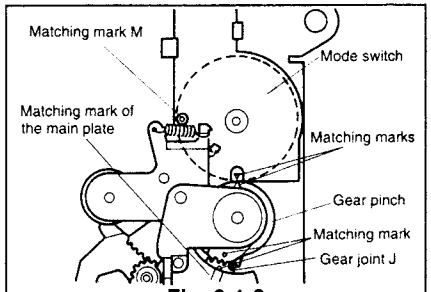



Fig. 2-1-2

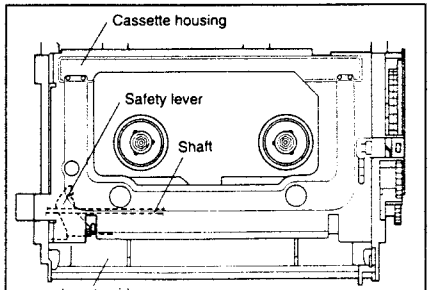



Fig. 2-1-3



### 2-2 Sens Gear, Drive Gear, Takeup Arm, and Arm Spring (TU)

(Removal)

① Remove the cassette housing.
(Refer to Para. 2-1 for the removal method.)

② Unfasten the four catches (ⓐ, ⓑ, ⓒ and ⓓ) as shown in Fig. 2-2-1 and remove the side plate.

③ Remove the sens gear.

④ Pull the lock levers on both the supply and takeup sides, shown in Fig. 2-6-1, in the direction shown by the arrow to shift the bottom plate to the position shown in Fig. 2-6-2.

⑤ Remove the takeup arm.

⑥ To remove the drive gear from the sens gear, turn and pull the drive gear in the direction shown by the arrow shown in Fig. 2-2-3.

⑦ Remove the arm spring (TU) from the takeup arm as shown in Fig. 2-2-4.

(Installation)

① Apply the grease (MULTEMP SH-M)[859D055O60] to the area of the new takeup arm shown in Fig. 2-2-4.

② Apply the grease (MULTEMP SH-M)[859D055O60] to the area shown in Fig. 2-2-5 of the new sens gear.

③ Apply the grease (MULTEMP SH-M)[859D055O60] to the area shown in Fig. 2-2-6 of the new sens gear.

④ Place the clip spring on the drive gear hooking one end under the catch as shown in Fig. 2-2-5. Install the sens gear on the drive gear so that hole A aligns with hole B. Hold the sens gear while turning the drive gear clockwise, in so doing engage the other end of the clip spring with the catch of the sens gear. The projection A of the sens gear must enter the hole B of the drive gear.

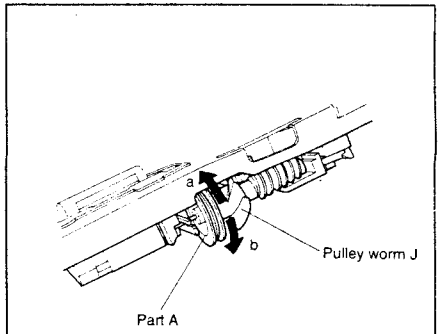



Fig. 2-1-4

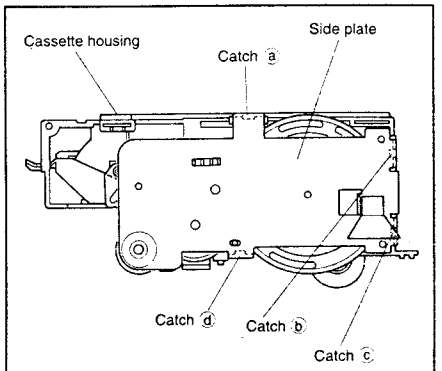



Fig. 2-2-1

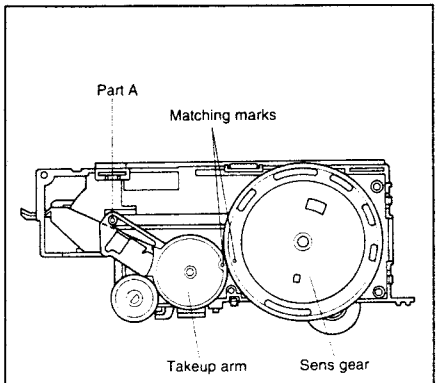



Fig. 2-2-2

⑤ *Ensure the spring action is effective by holding the sens* gear and turning the drive gear slightly clockwise, observing whether the drive gear returns when released.

⑥ Apply the grease (MULTEMP SH-M)[859D055O60] to the area of the new takeup arm shown in Fig. 2-2-7.

⑦ Install the takeup arm so that the shaft from the bottom plate enters between the takeup arm and takeup spring, after the bottom plate is in the position shown in Fig. 2-6-2.

**Note:** Install the takeup arm so that the engaging point between the supply arm and gear-S, and that between the takeup arm and gear-T are symmetrical as shown in Fig. 2-4-1.

⑧ Shift the bottom plate back to the eject position and install the sens gear so that the matching marks of the sens gear and the takeup arm align as shown in Fig. 2-2-2.

⑨ Install the side plate.

⑩ Install the cassette housing.
(Refer to Para. 2-1 for the installation method.)

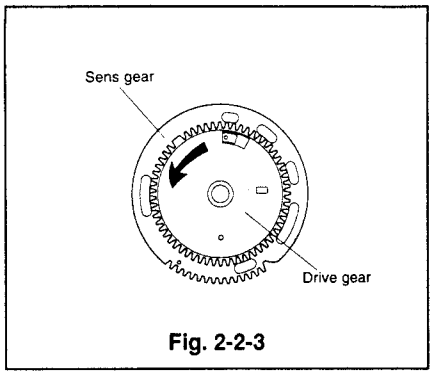



**Fig. 2-2-3**

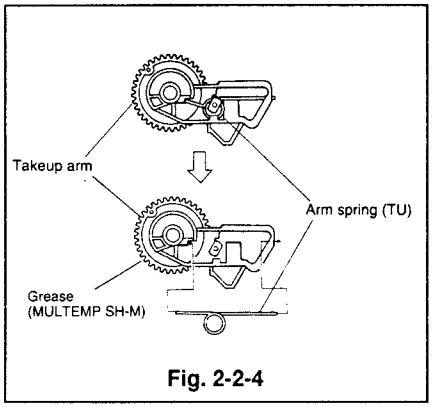



**Fig. 2-2-4**

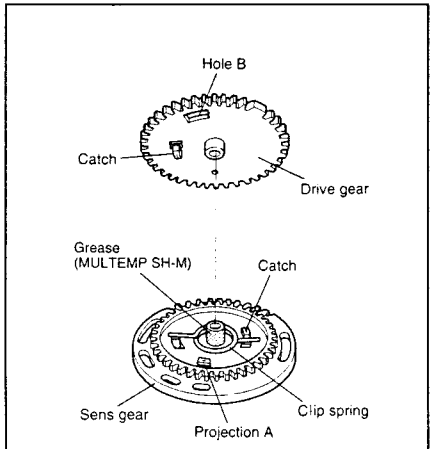



**Fig. 2-2-5**



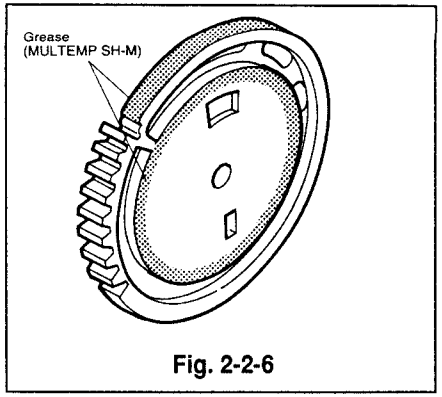



**Fig. 2-2-6**

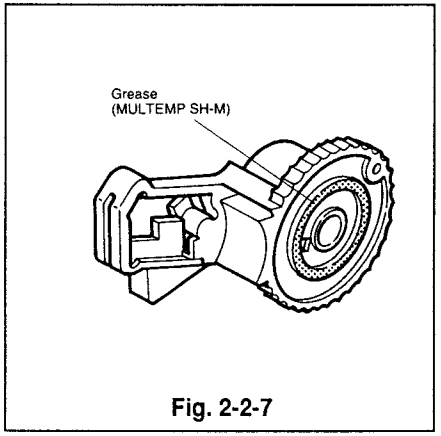



**Fig. 2-2-7**

### 2-3 Door Arm

(Removal)

① Remove the cassette housing.
(Refer to Para. 2-1 for the removal method.)

② Remove the side plate, sens gear, and takeup arm. (Refer to Para. 2-2 for the removal method.)

③ Unfasten the catch shown in Fig. 2-3-1 to remove the door arm. (Pull the door arm at the same time as unfastening the catch.)

(Installation)

① Fix the door arm to the shaft A shown in Fig. 2-3-1 and secure it with the catch so that the parts A and B are inside of the cassette housing, as shown in Fig. 2-3-2.

② Install the takeup arm, sens gear, and side plate.
(Refer to Para. 2-2 for the installation method.)

③ Install the cassette housing.
(Refer to Para. 2-1 for the installation method.)

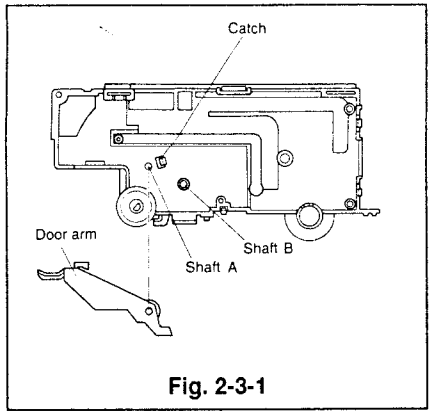



Fig. 2-3-1

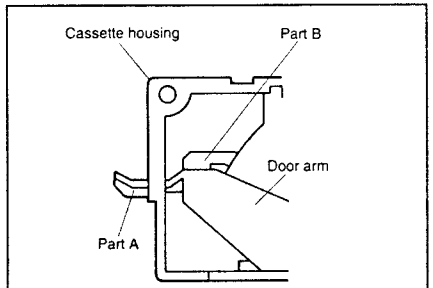



Fig. 2-3-2

### 2-4 Gear S and Gear T

(Removal)

① Follow the removal method in Items 1 to 5 of Para. 2-2.

② Unfasten the catch holding gear T from the inside of the cassette housing and remove the FL shaft to which the gear S and T are attached. (Refer to Fig. 2-4-2)

③ Pull out the gears S and T from the FL shaft.

(Installation)

① Fix the gear' S and T to the FL shaft.

② Install the FL shaft, first the end attached to gear T and then the end with gear S.

③ Follow the installation method in Item' 5 to 8 in Para. 2-2.

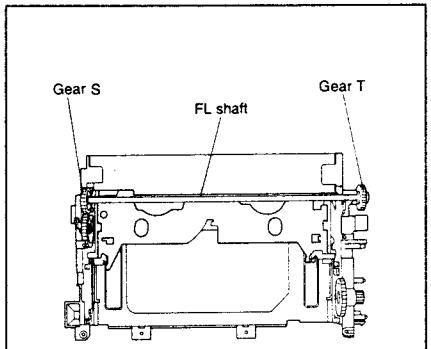



Fig. 2-4-1



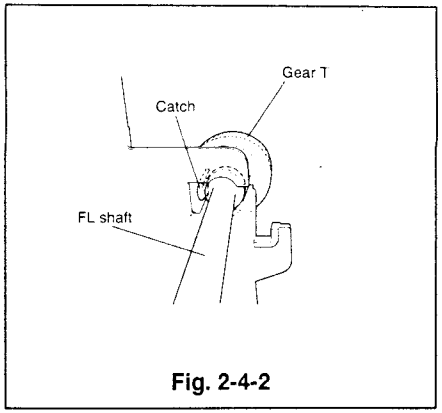



Fig. 2-4-2

### 2-5 Wheel Gear

(Removal)

① Remove the cassette housing.
(Refer to Para. 2-1 for the removal method.)

② Remove the side plate and sense gear.
(Refer to Para. 2-2 for the removal method.)

③ Unfasten the catch shown in Fig. 2-5-1 to remove the wheel gear.

(Installation)

① Install the wheel gear in the position shown in Fig. 2-5-1, from the inside of the cassette housing.

② Install the sens gear and side plate.
(Refer to Para. 2-2 for the installation method.)

③ Install the cassette housing.
(Refer to Para. 2-1 for the installation method.)

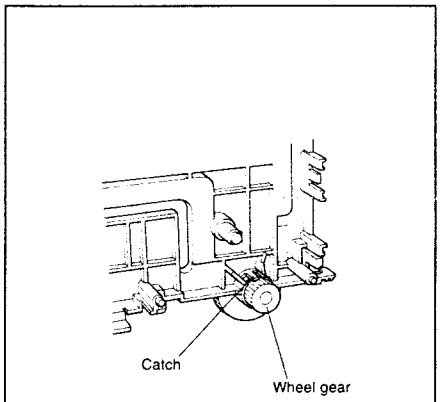



Fig. 2-5-1

### 2-6 Supply Arm and Arm Spring (SP)

(Removal)

① Remove the cassette housing.
(Refer to Para. 2-1 for the removal method.)

② Remove the side plate.
(Refer to Item 2 of Para. 2-2 for the removal method.)

③ Remove the sens gear.
(Refer to Item 3 of Para. 2-2 for the removal method.)

④ Pull the lock levers on both the supply and takeup side, shown in Fig. 2-6-1, in the direction shown by the arrow to shift the bottom plate to the position shown in Fig. 2-6-2.

⑤ Remove the takeup arm.
(Refer to Item 5 of Para. 2-2 for the removal method.)

⑥ Pull part A, fixed to the supply arm, in the direction shown by the arrow to remove the bottom plate.
(Refer to Fig. 2-6-3.)

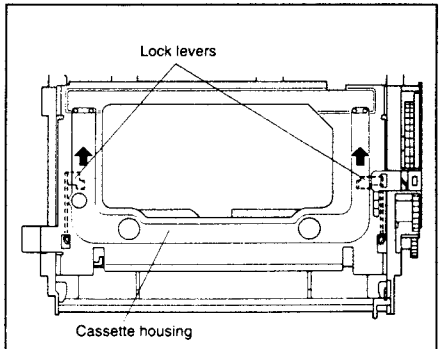



Fig. 2-6-1

⑦ Turn the supply arm in the direction shown by the arrow to shift part B, shown in Fig. 2-6-4, so that it aligns with the catch. Unfasten the catch to remove the supply arm.
⑧ Detach the arm spring from the supply arm as shown in Fig. 2-6-5.

(Installation)
① Attach the arm spring to the supply arm as shown in Fig. 2-6-5.
② Install the supply arm in the position shown in Fig. 2-6-4. (Align the catch with the part B of the supply arm.)
③ Insert the bottom plate so part A enters between the supply arm and the supply spring as shown in Fig. 2-6-3. Then install the bottom plate so that part C is in the position shown in Fig. 2-6-6.
④ Follow the installation method in Item ⑤ to ⑧ in Para. 2-2.

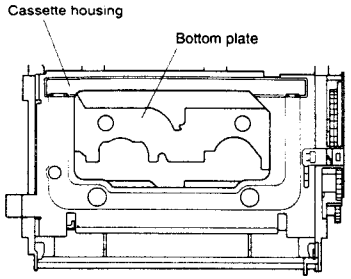


Fig. 2-6-2

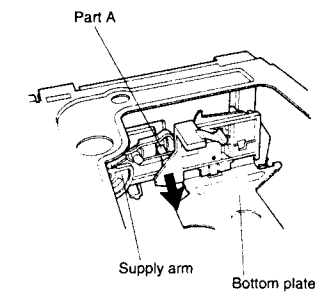


Fig. 2-6-3

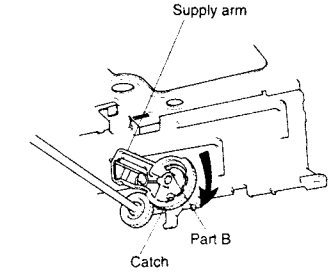


Fig. 2-6-4



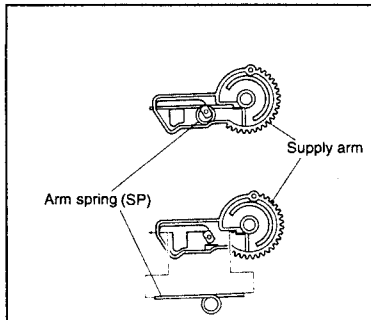


Fig. 2-6-5

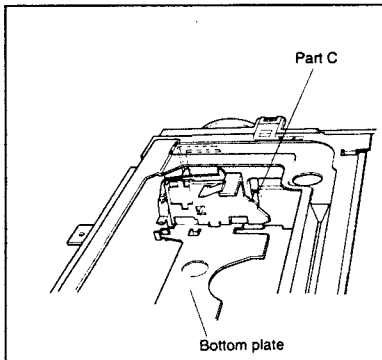


Fig. 2-6-6

## 2-7 Jut

(Removal)

① Follow the removal method in Items ① to ⑥ of Para. 2-6.

② Unfasten the four catches (ⓐ, ⓑ, ⓒ and ⓓ) shown in Fig. 2-7-1 to remove the jut and the jut spring.

(Installation)

① Install the jut and the jut spring as shown in Fig. 2-7-1. (Insert the jut spring into the part A of the jut before installing the jut. Hook one end of the jut spring with the outside of the catch (ⓐ) and the other end with part B of the jut.)

② Install the bottom plate according to the installation method in ③ of Para. 2-6.

③ Follow the installation method in Items ⑤ to ⑧ in Para. 2-2.

## 2-8 PCB-HA/AUDIO

(Removal)

① Unfasten the hook and raise the head amp shield cover shown in Fig. 2-8-1 to remove it.

② Unsolder the terminals of the mode switch, the drum motor, and the rotary transformer shown in Fig. 2-8-1.

③ Lift the stopper of the A/C head assembly in Fig. 2-8-4 slightly upward and disconnect the lead connector (bare wire), connecting the PCB-HA/AUDIO and the PCB-A/C-HEAD.

④ Disconnect the lead connector (point A), connected to the FE head. (Refer to Fig. 2-8-2.)

⑤ Reverse the deck and disconnect the lead card, connecting the PCB of the capstan motor and the PCB-HA/AUDIO. (Refer to Fig. 2-8-3.)

⑥ Remove the three screws (ⓐ, ⓑ and ⓒ) and slowly pull the PCB-HA/AUDIO in the direction shown by the arrows. (Refer to Fig. 2-8-1.)

(Installation)

① Insert the terminals of the mode switch, the drum motor, and the rotary transformer, and the boss, adjacent to the mode switch, in the matching holes on the PCB-HA/AUDIO and secure the PCB-HA/AUDIO with the three screws (ⓐ, ⓑ and ⓒ) in the order, ⓑ→ⓒ→ⓐ. (Refer to Fig. 2-8-1)

② Solder the pins mentioned in Item ①.

③ Reverse the deck and reconnect the lead card connecting the PCB of the capstan motor and the PCB-HA/AUDIO. (Refer to Fig. 2-8-3) Take care not to fit lead card upside down.

④ Connect the lead connector, connected to the FE head, to the point A. (Refer to Fig. 2-8-2.)

⑤ Shift part B of the bare wire lead extended from the head amp slightly downward, lower the stopper, and connect it to the connector on the PCB-A/C-HEAD. (Refer to Fig. 2-8-4)

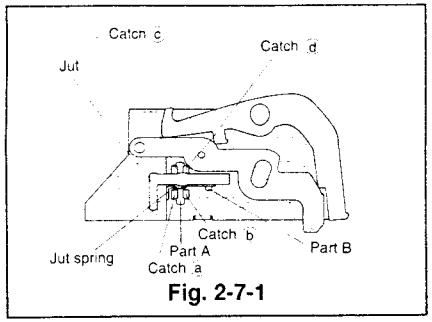


Fig. 2-7-1

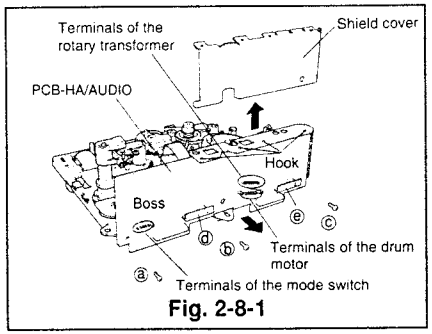


Fig. 2-8-1

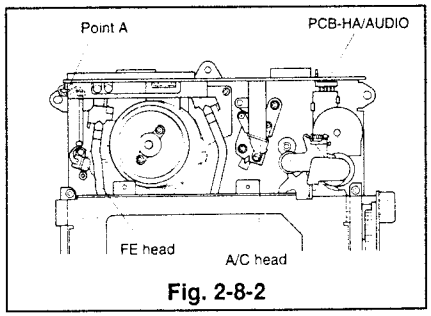


Fig. 2-8-2

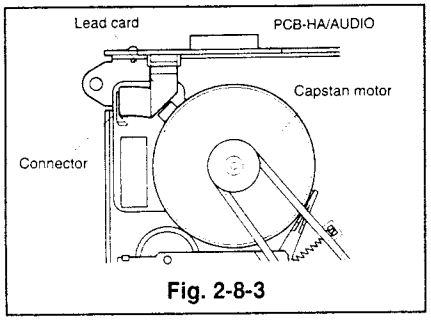


Fig. 2-8-3



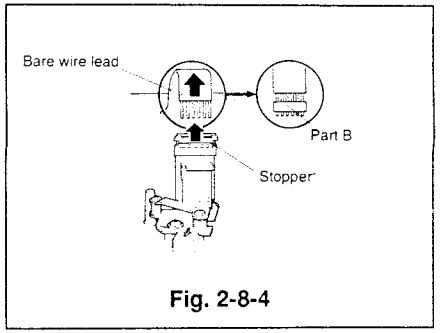


Fig. 2-8-4

## 2-9 Brush (Refer to the Fig.2-9-1.)

(Removal)

① Reverse the deck and remove the three screws (ⓐ, ⓑ and ⓒ) to remove the brush.

(Installation)

① Attach the brush on the position shown in Fig. 2-9-1 and secure it with the screws ⓐ and ⓑ. Tighten screw ⓒ.

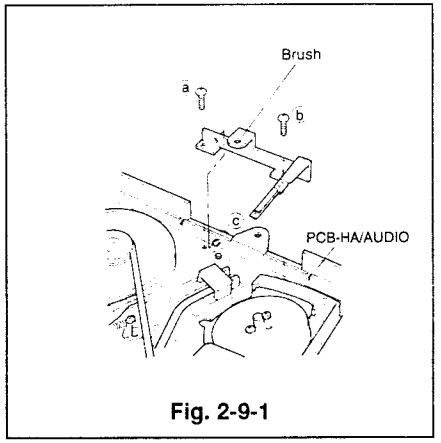


Fig. 2-9-1

## 2-10 Drum Assembly

**Note:** When removing and installing the drum assembly, do not touch the tape running surface with your hands.

**Note:** Take care not to bend the PCB-HA/AUDIO.

(Removal)

① Remove the cassette housing. (Refer to Para. 2-1 for the removal method.)

② Remove the PCB-HA/AUDIO. (Refer to Para. 2-8 for the removal method.)

③ Unscrew the three screws (ⓐ, ⓑ and ⓒ) on the reverse side of the deck and remove the drum assembly. (Refer to Fig. 2-10-1.)

④ Slowly raise the drum assembly upward, take care not to touch other parts around it. (Do not touch the tape running surface of the drum with your hand.)

**Note:** During removal, support the drum assembly when it is not secured by fastening screws.

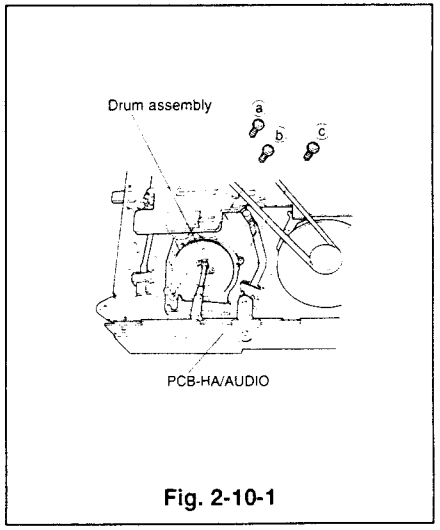


Fig. 2-10-1

(Installation)

① Carefully place the new drum assembly on the main plate of the deck, take care not to touch other parts.

② Holding the drum assembly, reverse the deck and secure the drum assembly with the three screws (ⓐ, ⓑ and ⓒ). (Tighten the screws in the order ⓐ→ⓑ→ⓒ and finally tighten again ⓐ.) (Refer to Fig. 2-10-1.)

③ Install the PCB-HA/AUDIO.
(Refer to Para. 2-8 for the installation method.)

④ Install the cassette housing.
(Refer to Para. 2-1 for the installation method.)

**[Another Method]**

(Removal)

① Remove the cassette housing.
(Refer to Para. 2-1 for the removal method.)

② Unsolder the soldered pins on the terminal of the drum assembly and the terminal of the rotary transformer. (Refer to Fig. 2-10-2)

③ Unscrew the three screws (ⓐ, ⓑ and ⓒ) on the reverse side of the deck and remove the drum assembly. (Refer to Fig. 2-10-1.)

④ Slightly raise the drum assembly in the opposite direction of the pins. Remove the pins of the drum assembly and of the rotary transformer from the PCB-HA/AUDIO. Slowly remove the drum assembly, take care not to touch other parts around it.

(Installation)

① Carefully place the drum assembly on the main plate, take care not to touch the other parts around it. The pins of the drum assembly and the rotary transformer must enter the holes of the PCB-HA/AUDIO.

② Secure the drum assembly with the three screws (ⓐ, ⓑ and ⓒ) on the reverse side of the deck. (Tighten the screws in the order ⓐ→ⓑ→ⓒ and finally tighten ⓐ again.) (Refer to Fig. 2-10-1.)

③ Solder the pins of the drum assembly and the rotary transformer. (Refer to Fig. 2-10-2.)

④ Install the cassette housing.
(Refer to Para. 2-1 for the installation method.)

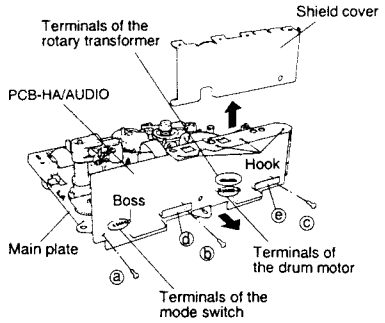



**Fig. 2-10-2**

## 2-11 Upper Drum and Drum Motor

**Note:** When only the upper drum is to be replaced, follow the procedure of Items ②~④ of the removal method and ②~④ of the installation method.

(Removal)

① Remove the drum assembly.
(Refer to Para. 2-10 for the removal method.)

② Unsolder the terminals of each head on the upper drum.

③ Remove the screws holding the upper drum shown in Fig. 2-11-1.

④ Remove the upper drum slowly and carefully.

⑤ Remove the screws (ⓐ and ⓑ) shown in Fig. 2-11-1 to remove the rotor case and damper. Remove the screws (ⓒ, ⓓ and ⓔ) to remove the drum motor.

(Installation)

**Note:** Handle the upper drum carefully as the video heads are fragile.

① Attach the rotary transformer and the drum motor so that the terminals of both face in the same direction, and secure them with the screws (ⓒ, ⓓ and ⓔ). Secure the rotor case with the screws (ⓐ and ⓑ).

② Position the white painted (shaded) area of the upper drum so that the area is 90° apart from the hole of the lower dram shaft. Insert the upper drum. Take care not to touch the head terminals. [Fig. 2-11-2]

③ Secure the upper drum with the two fastening screws. (Tighten the screws alternately.)

④ Solder the terminals of each head.

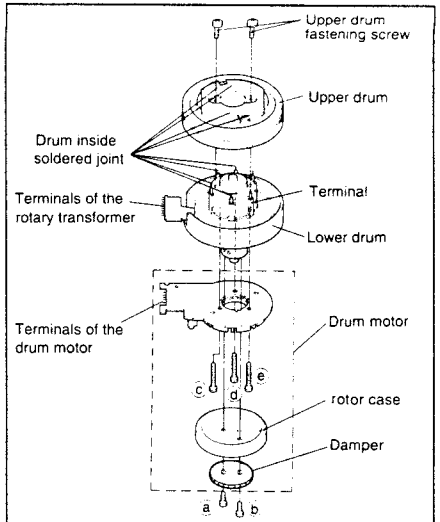



**Fig. 2-11-1**

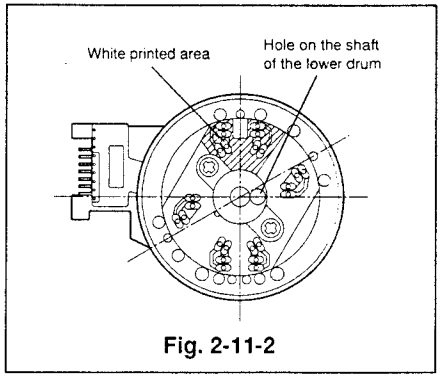



**Fig. 2-11-2**

## 2-12 Safety Spring and Safety Lever

(Removal)

① Remove the cassette housing. (Refer to Para. 2-1 for the removal method.)

② Unhook the safety spring with a tweezers.

③ Turn the safety lever clockwise and remove by raising it upward as shown in Fig. 2-12-2.

(Installation)

① Install the safety lever so that part A aligns with the hole on the main plate, shown in Fig. 2-12-1, and part B with the hole of the safety arm on the reverse side of the deck.

② Fix the safety spring to the shaft of the safety lever and hook it as shown in Fig. 2-12-3.

③ Install the cassette housing.(Refer to Para. 2-1 for the installation method.)

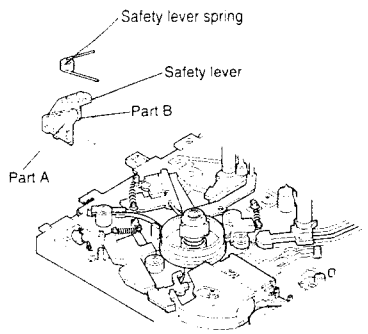



Fig. 2-12-1

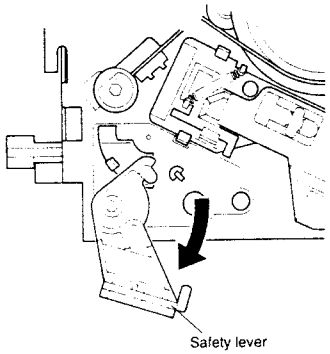



Fig. 2-12-2

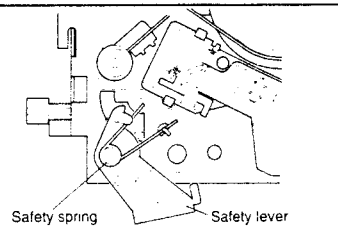



Fig. 2-12-3



## 2-13 Safety Arm

(Removal)

① Remove the cassette housing. (Refer to Para. 2-1 for the removal method.)

② Remove the safety spring and the safety lever. (Refer to Para. 2-12 for the removal method.)

③ Unfasten the catch to remove the safety arm. (Refer to Fig. 2-13-1).

(Installation)

① Reverse the deck and fix the safety arm to the shaft of the main plate so that its catch is within the range shown in Fig. 2-13-2.

② Install the safety spring and the safety lever. (Refer to Para. 2-12 for the installation method.)

③ Install the cassette housing. (Refer to Para. 2-1 for the installation method.)

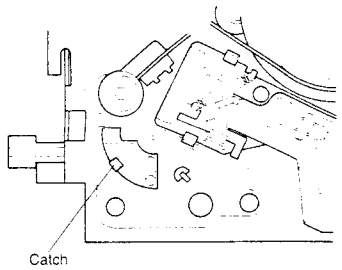



Fig. 2-13-1

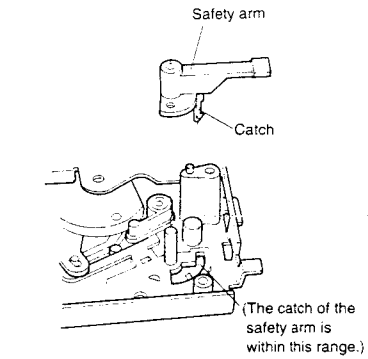



Fig. 2-13-2

## 2-14 Sub Brake(SP) and Sub Spring(SP)

(Removal)

① Remove the cassette housing. (Refer to Para. 2-1 for the removal method.)

② Detach the sub spring(SP).

③ Reverse the deck and unfasten the catch with a small screw driver, etc., to remove the sub brake(SP) as shown in Fig. 2-14-2.

(Installation)

① Install the sub brake(SP) with care not to score the tension brake belt(without loosening of the tension brake belt).(Refer to Fig. 2-14-1)

② Attach the sub spring(SP).

③ Install the cassette housing.(Refer to Para. 2-1 for the installation method.)

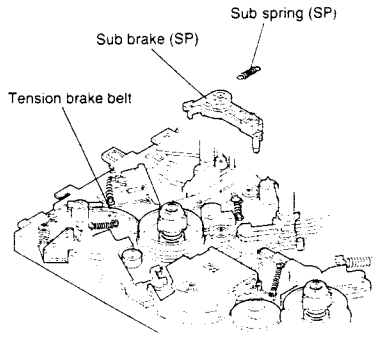



Fig. 2-14-1

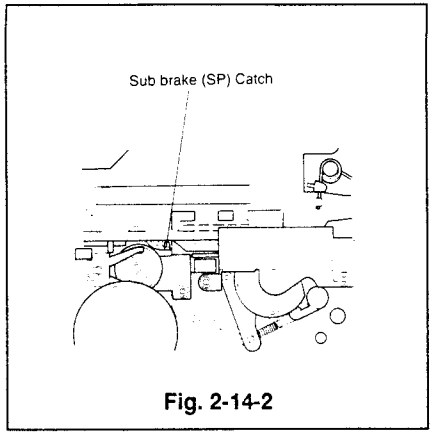



Fig. 2-14-2

## 2-15 Main Brake (SP) and Main Brake Spring J(SP) (Refer to Fig. 2-15-1.)

(Removal)

① Remove the cassette housing. (Refer to Para. 2-1 for the removal method.)
② Remove the sub brake(SP) and the sub spring(SP). (Refer to Para. 2-14 for the removal method.)
③ Unhook the main brake spring J(SP).
④ Raise the main brake(SP) upward to remove it.

(Installation)

① Install the main brake(SP) on the main plate and attach the main brake spring J(SP).
② Install the sub brake(SP) and the sub spring(SP). (Refer to Para. 2-14 for the installation method.)
③ Install the cassette housing. (Refer to Para. 2-1 for the installation method.)

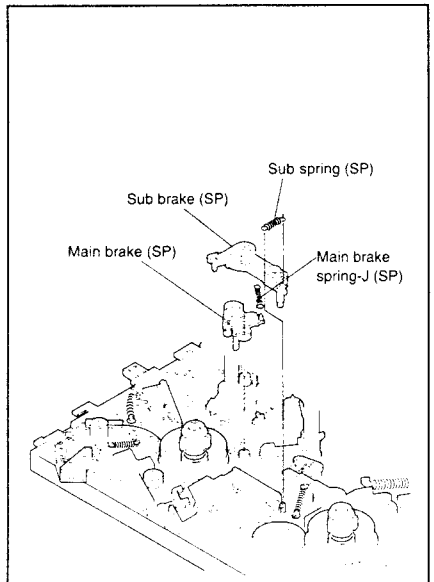



Fig. 2-15-1



## 2-16 Sub Off Lever, Sub Brake (TU), and Sub Spring (TU)

(Removal)

① Remove the cassette housing. (Refer to Para. 2-1 for the removal method.)
② Remove the sub brake (SP) and the sub spring (SP). (Refer to Para. 2-14 for the removal method.)
③ Unfasten the catch with a small screw driver, etc., and raise the sub off lever upward to remove it. (Refer to Fig. 2-16-2)
④ Remove the sub spring (TU). (Refer to Fig. 2-16-1.)
⑤ Unfasten the catch with a small screw driver, etc., and raise the sub brake (TU) upward to remove it as shown in Fig. 2-16-2.

(Installation)

① Apply the grease (PG-641)[859D055O30] to the area shown in Fig. 2-16-3.
② Install the sub brake (TU) on the main plate.
③ Install the sub off lever so that the hole A aligns with the boss of the sub brake (TU) as shown in Fig. 2-16-1.
④ Install the sub spring (TU).
⑤ Install the sub brake (SP) and the sub spring (SP). (Refer to Para. 2-14 for the installation method.)
⑥ Install the cassette housing. (Refer to Para. 2-1 for the installation method.)

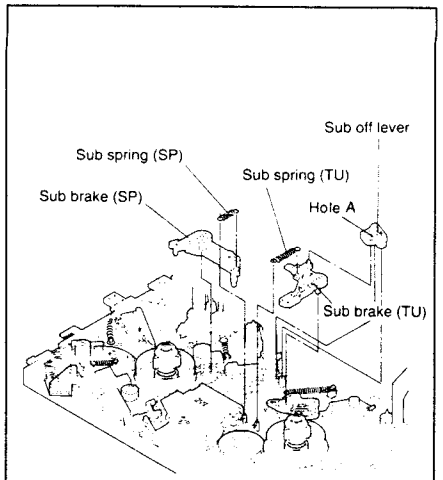



Fig. 2-16-1

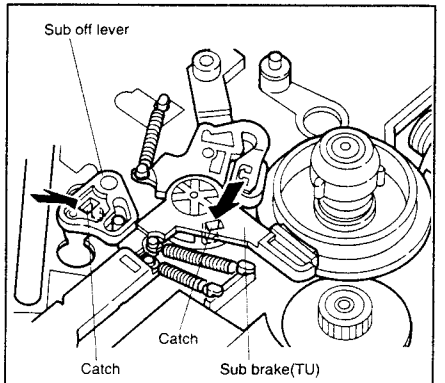



Fig. 2-16-2

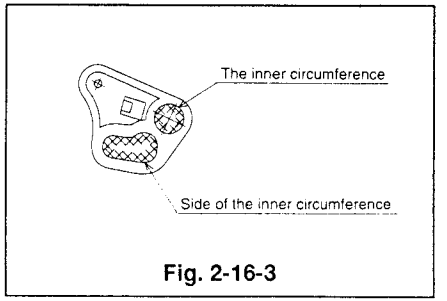



Fig. 2-16-3

## 2-17 Main Brake(TU) and Main Brake Spring J(TU)

(Removal)

① Remove the cassette housing. (Refer to Para. 2-1 for the removal method.)

② Remove the sub brake(SP) and the sub spring(SP). (Refer to Para. 2-14 for the removal method.)

③ Remove the sub off lever, the sub brake(TU), and the sub spring(TU). (Refer to Para. 2-16 for the removal method.)

④ Remove the main brake spring J(TU) and raise the main brake(TU) upward to remove it. (Refer to Fig. 2-17-1.)

(Installation)

① Install the main brake(TU) on the main plate assembly so that the coupling portion with the main brake release lever is as shown in Fig. 2-17-2.

② Install the main brake spring J(TU).

③ Install the sub brake(TU), the sub off lever, and the sub spring(TU). (Refer to Para. 2-16 for the installation method.)

④ Install the sub brake(SP) and the sub spring(SP). (Refer to Para. 2-14 for the installation method.)

⑤ Install the cassette housing. (Refer to Para. 2-1 for the installation method.)

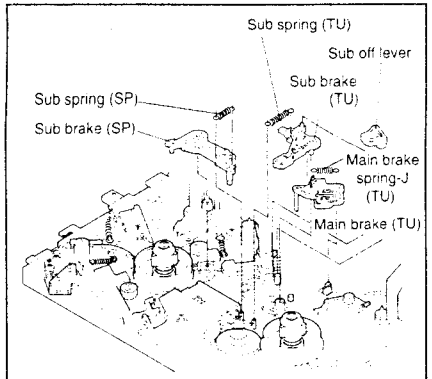



Fig. 2-17-1

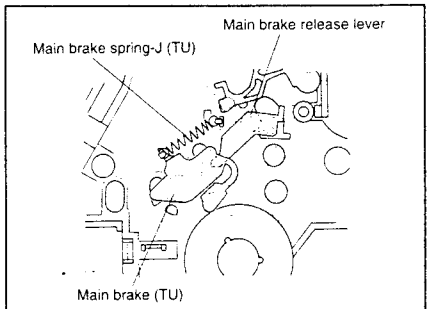



Fig.2-17-2

## 2-18 ID Swing Lever, Revolution Lever, and Revolution Spring

(Removal)

① Remove the cassette housing. (Refer to Para. 2-1 for the removal method.)

② Reverse the deck and remove the grip ring attached to the shaft G of the charge assembly.

③ Unfasten the two catches(A, B) to remove the charge assembly.

④ Remove the revolution spring with a tweezers.

⑤ Slide the revolution lever in the direction shown by the arrow and unfasten it from the catch C of the ID swing lever.(Refer to Fig. 2-18-1)

⑥ Detach the charge spring from the ID swing lever.

(Installation)

① Apply the grease(PG-641)[859D055O30] to the areas shown in Fig. 2-18-2 of the new revolution lever and the ID swing lever.

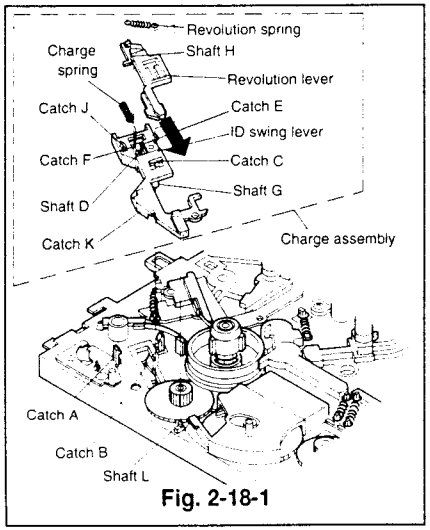



Fig. 2-18-1



② Fix the charge spring to shaft D of the ID swing lever and compress it to hook its ends with the catches E and F.(Refer to Fig. 2-18-1)

**Note:** The charge spring should be installed in the directions shown below.

**(Longitudinal Direction)**

The bent tip is attached on the shaft D.

**(Traverse Direction)**

The wider semicircle is on the left as shown in Fig. 2-18-1.

③ Align the shaft H of the revolution lever with the position shown in Fig. 2-18-1. Insert catch C of the ID swing lever into the hole of the revolution lever, pushing the charge spring with a revolution lever in the direction shown by the arrow. At the same time, hook the ends of the revolution lever with the catches J and K.

④ Attach the revolution spring with a tweezers.

⑤ Install the charge assembly so that shaft G enters into the oval hole of the charge lever on the reverse side of the deck and the groove of the charge assembly fits the shaft as shown in Fig. 2-18-1. Secure the charge assembly with the catch A and B.

⑥ Reverse the deck and fix the new grip ring to the shaft G of the charge assembly.

⑦ Install the cassette housing. (Refer to Para. 2-1 for the installation method.)

## 2-19 Tension Arm, Tension Brake Belt, and Tension Spring

**Note:** During removal and installation, take care not to change the shape of the tension brake belt.

(Removal)

① Remove the cassette housing. (Refer to Para. 2-1 for removal method.)

② Supply a voltage(approximately 5V DC plus voltage on the red wire) to the loading motor and slide the tape guide assembly completely to the loaded position,to set it to the loaded position.

③ Remove the sub brake(SP) and the sub spring(SP). (Refer to Para. 2-14 for the removal method.)

④ Unfasten the catch of the part A on the tension brake belt and raise the part A to unfasten the tension brake belt from the supply reel disk.(Refer to Fig. 2-19-1)

⑤ Remove the tension spring, unfasten the catch shown in Fig. 2-19-2, and raise the tension arm upward to remove it.

⑥ Reverse the tension arm, unfasten the catch with a tweezers as shown in Fig. 2-19-3 to remove the tension brake belt.

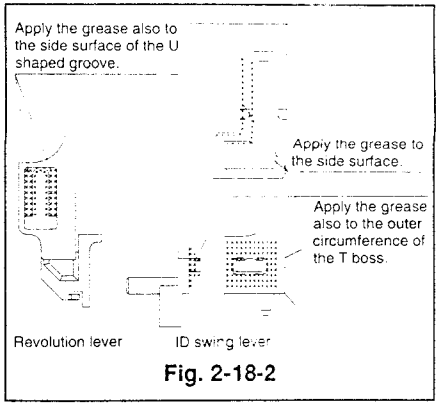

Apply the grease also to the side surface of the U shaped groove.
Apply the grease to the side surface.
Apply the grease also to the outer circumference of the T boss.
Revolution lever
ID swing lever

Fig. 2-18-2

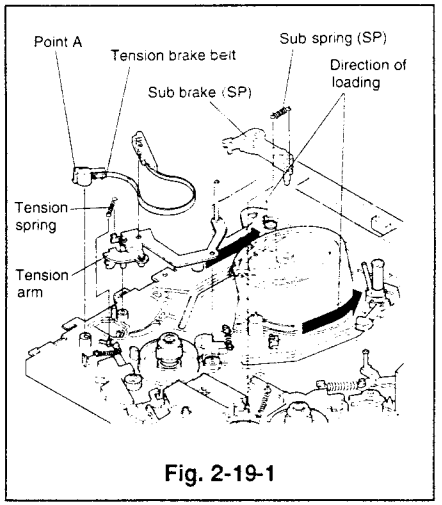



Fig. 2-19-1

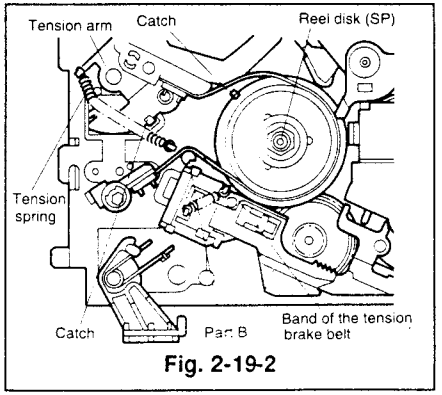



Fig. 2-19-2

*(Installation)*

① Insert the catch in the position of the tension arm as shown in Fig. 2-19-3 to fasten the tension brake belt on the tension arm. (Take care not to let projection C, next to the catch of the tension brake belt touch the tension arm.)

② Install the tension arm, where the tension brake belt is fastened, on the main plate.

③ Fasten the tension brake belt around the supply reel disk. (The band of the tension brake belt must pass the outside of the catch shown in Fig. 2-19-2 and inside of the part B.)

④ Attach the tension spring.

⑤ Install the sub brake(SP) and sub spring(SP). (Refer to Para. 2-14 for the installation method.)

⑥ Supply voltage(approximately 5V), reversing the polarity used in ② of the Removal method, to set the motor to the unloaded position.

⑦ Make sure that the holes (matching mark M) on the body and cogwheel of the mode switch align with each other as shown in Fig. 2-19-4. At the same time confirm that the hole of the gear pinch aligns with the matching marks of the gear joint J and the ▽mark on the mode switch cogwheel,refer to Fig. 2-19-5. This indicates the J deck is in the EJECT mode.

⑧ If the deck is not completely set to the eject mode, turn part D of the pulley worm J by hand to set the eject mode.

Turn in the direction a ····· for loading
Turn in the direction b ····· for unloading
(Refer to Fig. 2-19-6)

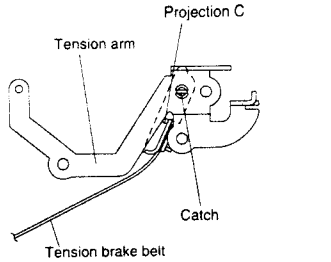


Fig. 2-19-3

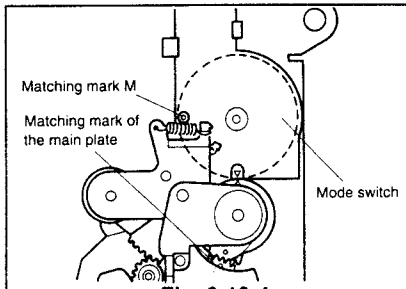
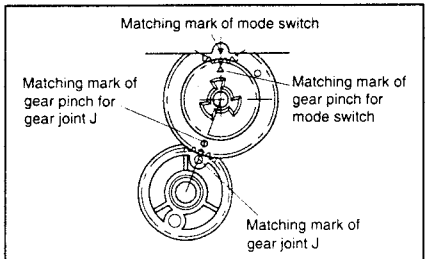


Fig. 2-19-4


Matching mark of mode switch
Matching mark of gear pinch for gear joint J
Matching mark of gear pinch for mode switch
Matching mark of gear joint J
Fig. 2-19-5

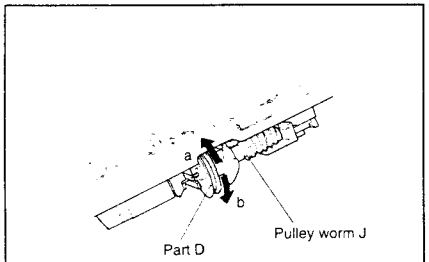


Fig. 2-19-6



## 2-20 Takeup Reel Disk and Gear R(takeup side)

(Removal)

① Remove the cassette housing. (Refer to Para. 2-1 for the removal method.)

② Remove the sub brake(SP) and the sub spring(SP). (Refer to Para. 2-14 for the removal method.)

③ Remove the sub off lever, the sub brake(TU), and the sub spring(TU). (Refer to Para. 2-16 for the removal method.)

④ Unfasten the catch shown in Fig. 2-20-1 and raise the takeup reel disk upward to remove it from the shaft.

⑤ Raise the gear R(takeup side) upward to remove it from the shaft. (Refer to Fig. 2-20-2.)

(Installation)

① Install the gear R(takeup side) on the shaft. (Refer to Fig. 2-20-2.)

② Install the takeup reel disk on the shaft.(Refer to Fig. 2-20-2)

③ Install the height adjusting jig [master plane](used for F deck: Part No.859C342020) in the specified position. (Insert the jig into hole A, shown in Fig. 2-20-3, so that the jig sets on part B and the end of part C. Take care that the jig does not touch the supply and takeup reel disks.)

④ Place the height adjusting jig [square](used for E deck: Part No.859C341070) on the jig installed in Item ③ as shown in Fig. 2-20-4. Make sure that the height is correct (between A and B).

⑤ Adjust the height of the supply reel disk by varying the number of the washers (Part No.552C017O20) under the disk.

A) If it is high, remove washer(s).

B) If it is low, add washer(s).

⑥ Install the sub brake(TU), the sub off lever, and the sub spring(TU). (Refer to Para. 2-16 for the installation method.)

⑦ Install the sub brake(SP) and the sub spring(SP). (Refer to Para. 2-14 for the installation method.)

⑧ Install the cassette housing. (Refer to Para. 2-1 for the installation method.)

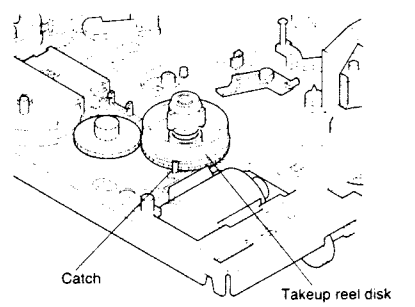


Fig. 2-20-1

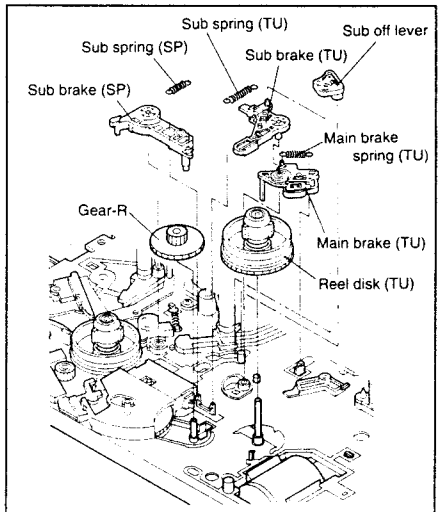


Fig. 2-20-2

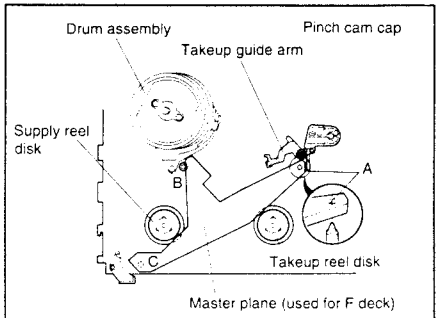


Fig. 2-20-3

## 2-21 Supply Reel Disk

(Removal)

① Remove the cassette housing. (Refer to Para. 2-1 for the removal method.)
② Remove the sub brake(SP) and the sub spring(SP). (Refer to Para. 2-14 for the removal method.
③ Raise the part B of the tension brake belt upward to unfasten the belt from the supply reel disk as shown in Fig. 2-21-2. (Refer to Para. 2-19 for the removal method.)
④ Unfasten the catch shown in Fig. 2-21-1 and raise the supply reel disk upward to remove it from the shaft.

(Installation)

① Install the supply reel disk on the shaft.
② Install the height adjusting jig [master plane](used for F deck: Part No.859C342020) in the specified position. (Insert the jig into the hole A shown in Fig. 2-20-3 so that the jig sets on part B and the end of part C. Take care that the jig does not touch the supply and takeup reel disks.)
③ Place the height adjusting jig [square](used for E deck: Part No.859C341070) on the jig, previously installed placed in Item ④, as shown in Fig. 2-21-3. Make sure that the height is correct (between A and B).
④ Adjust the height of the supply reel disk by varying the number of the washers(Part No.552C017O20) under the disk.
   A) If it is high, remove washer(s).
   B) If it is low, add washer(s).

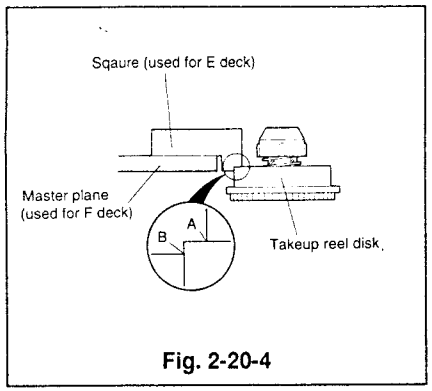



Fig. 2-20-4

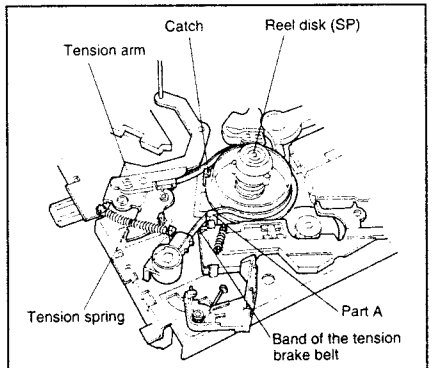



Fig. 2-21-1

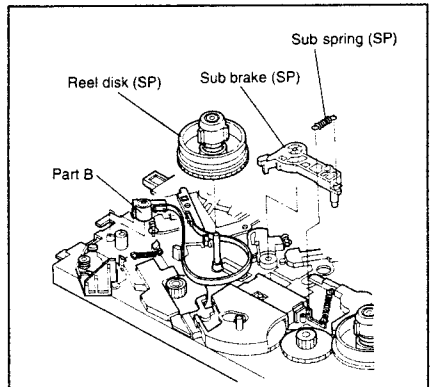



Fig. 2-21-2



⑤ Fasten the tension brake belt round on the supply reel disk, taking care not to score the belt and route part B of the tension brake belt as shown in Fig. 2-21-2. (Refer to Para. 2-19 for the installation method.) (The band of the tension brake belt must pass outside of the catch shown in Fig. 2-21-1 and inside of the part A.)
⑥ Install the sub brake(SP) and the sub spring(SP). (Refer to Para. 2-14 for the installation method.)
⑦ Install the cassette housing. (Refer to Para. 2-1 for the installation method.)

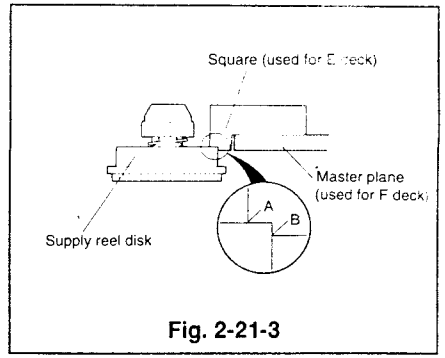



Fig. 2-21-3

## 2-22 Gear R(supply side) (Refer to Fig. 2-22-1.)

(Removal)

① Remove the cassette housing. (Refer to Para. 2-1 for the removal method.)
② Remove the sub brake(SP) and the sub spring(SP). (Refer to Para. 2-14 for the removal method.)
③ Unfasten the tension brake belt from the supply reel disk and remove the supply reel disk. (Refer to Para. 2-21 for the removal method.)
④ Remove the charge assembly. (Refer to item ② of Removal in Para. 2-18 for the removal method.)
⑤ Raise the gear R(SP) upward to remove it from the shaft.

(Installation)

① Install the gear R(SP) on the shaft.
② Install the supply reel disk. (Refer to Para. 2-21 for the installation method.)
③ Install sub brake(SP) and sub spring(SP). (Refer to Para. 2-14 for the installation method.)
④ Install the charge assembly. (Refer to Item ⑤ of Para. 2-18 for the installation method.)
⑤ Install the cassette housing. (Refer to Para. 2-1 for the installation method.)

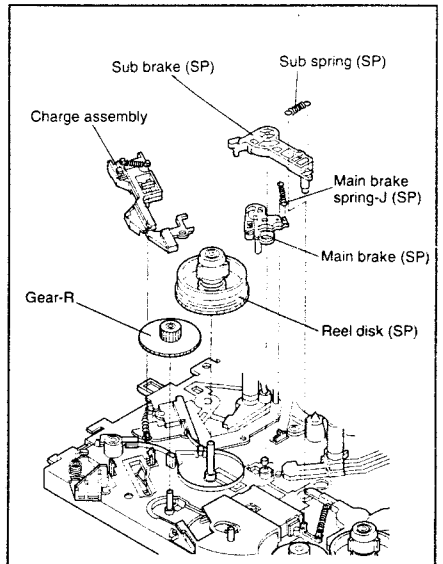



Fig. 2-22-1

## 2-23 Main Brake Release Lever

**(Refer to Fig. 2-23-1.)**

(Removal)

① Remove the cassette housing. (Refer to Para. 2-1 for the removal method.)
② Remove the sub brake(SP), and the sub spring(SP). (Refer to Para. 2-14 for the removal method.)
③ Remove the sub off lever, the sub brake(TU), and the sub spring(SP). (Refer to Para. 2-16 for the removal method.)
④ Remove the main brake(TU) and the main brake spring J(TU). (Refer to Para. 2-17 for the removal method.)
⑤ Shift catch A of the main brake release lever, and push catch B at the same time, in the direction shown by each arrow. Unfasten catch B from the main plate to remove the main brake release lever. (Refer to Fig. 2-23-2).

(Installation)

① Install the main brake release lever so that the shaft enters the inside groove shown in Fig. 2-23-3 of the main gear J.
② Install the main brake(TU) and the main brake spring J(TU). (Refer to Para. 2-17 for the installation method.)
③ Install the sub brake(TU), the sub off lever, and the sub spring(TU). (Refer to Para. 2-16 for the installation method.)
④ Install the sub brake(SP) and the sub spring(SP). (Refer to Para. 2-14 for the installation method.)
⑤ Install the cassette housing. (Refer to Para. 2-1 for the installation method.)

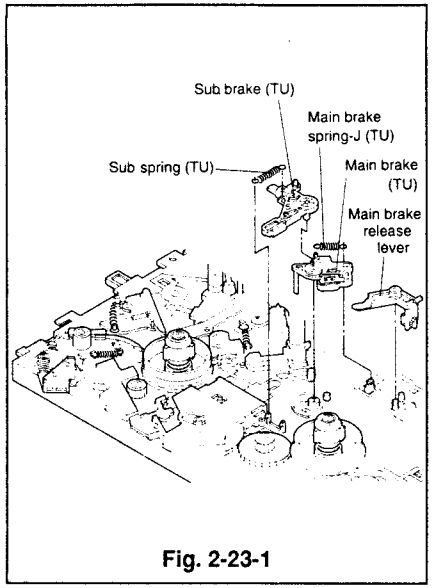



Fig. 2-23-1

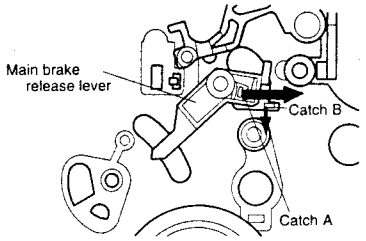



Fig. 2-23-2

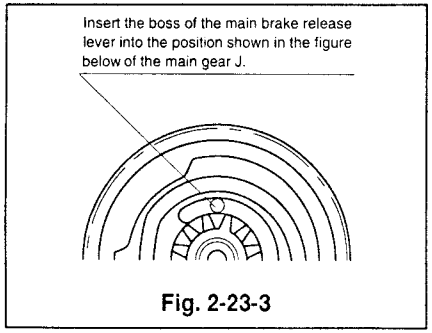



Fig. 2-23-3



## 2-24 Pinch Cam Cap, Pinch Roller Arm Assembly, Pinch Cam, Takeup Guide Gear, Gear Pinch, Takeup Guide Arm, and Takeup Guide Spring

(Removal)

① Unfasten the catch shown in Fig. 2-24-1 and raise the pinch cam cap upward to remove it.
② Raise the pinch roller arm assembly upward to remove it.
③ Raise the pinch cam and the takeup guide gear upward to remove them from the shaft.
④ Unfasten the two catches holding the mode switch and remove the gear pinch from the shaft, lift the mode switch only high enough to remove the gear pinch. (Take care not to break the pins of the mode switch.)
⑤ Remove the nut at the top of the takeup guide arm with a (5.5mm) box screw driver.
⑥ Raise the takeup guide arm upward to remove it.
⑦ Remove the takeup guide spring.

(Installation)

① Hook one end of the takeup guide spring with the takeup guide arm, fix the takeup guide spring to the shaft.
② Apply grease (PG-641) [859D055O30] around the top of the new takeup guide arm (the surface which touches with the nut). Fix the takeup guide arm to the shaft, and secure it with the nut. (Set the takeup guide arm to the height shown in Fig. 2-24-2 temporarily.)
③ Lift the mode switch, only high enough to install the gear pinch and place the gear pinch under the mode switch. Fix the mode switch to the shaft so that the matching marks of the gear pinch align with those of the gear joint J and the mode switch as shown in Fig. 2-24-3.
④ Install the takeup guide gear so that the first cog of the takeup guide arm aligns with the matching mark on the takeup guide gear as shown in Fig. 2-24-4.
⑤ Apply grease (G) [859D055O50] to the area shown in Fig. 2-24-5 of the new pinch cam.
⑥ Turn the takeup guide arm clockwise while inserting the pinch cam into the gear pinch. Install the pinch cam so that it aligns with the triple catch. (Excessive rotation of the takeup guide arm will keep it from returning, since the takeup guide gear is caught on the pinch roller cam.)
⑦ Apply the grease (PG-641) [859D055O30] to the new pinch cam cap on the area shown in Fig. 2-24-7.
⑧ Install the pinch roller arm assembly and the pinch cam cap.

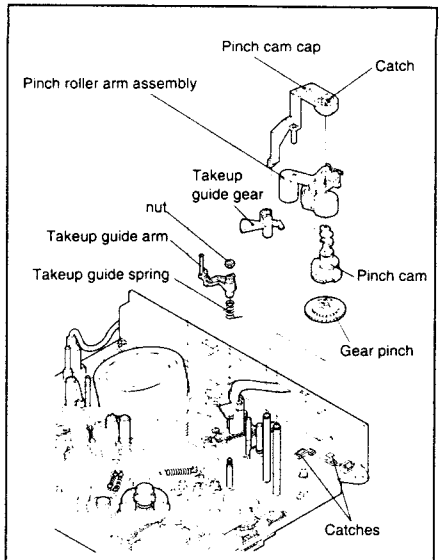



Fig. 2-24-1

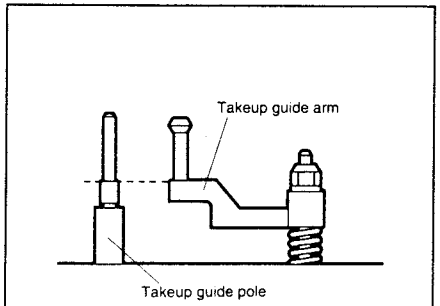



Fig. 2-24-2

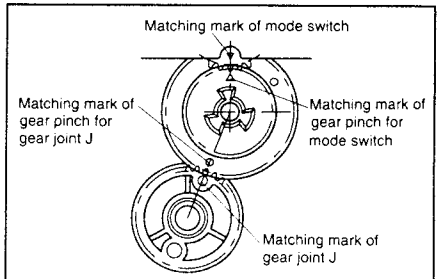

Matching mark of mode switch
Matching mark of gear pinch for gear joint J
Matching mark of gear pinch for mode switch
Matching mark of gear joint J

Fig. 2-24-3

**[Adjustment of Takeup Guide Arm Height]**

Adjust the height of the takeup guide arm according to the following procedure.

① Place the height adjusting jig (for the F deck) in the reference position on the main plate (Refer to Fig. 2-20-3). Tighten the takeup guide arm fastening nut so that the lower flange of the takeup guide arm is level with point B of the height adjusting jig (for the E deck). (Refer to Fig. 2-24-6).

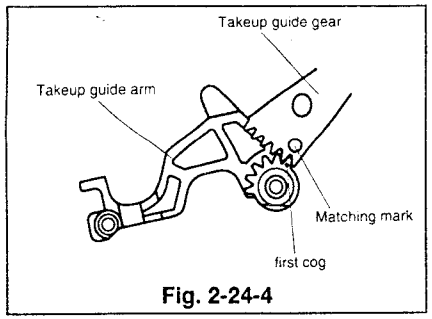



**Fig. 2-24-4**

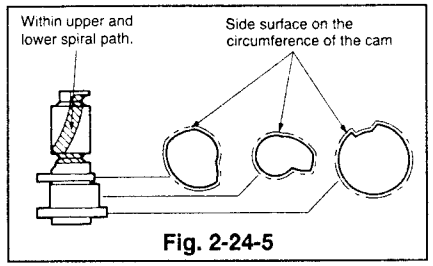



**Fig. 2-24-5**

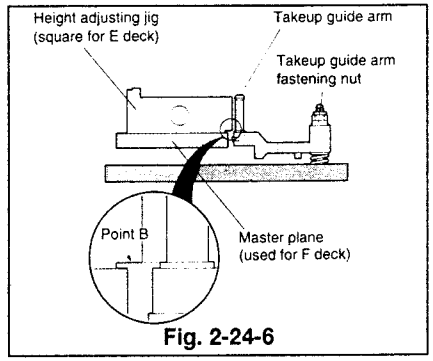

Height adjusting jig (square for E deck)
Takeup guide arm
Takeup guide arm fastening nut
Point B
Master plane (used for F deck)

**Fig. 2-24-6**

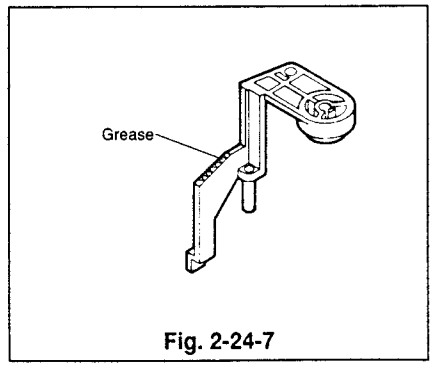



**Fig. 2-24-7**



## 2-25 Pinch Roller, Roller Cap, Pinch Spring, and Pinch Cam Spring

**Note:** During removal and installation, do not expand the pinch spring more than 18mm and the pinch cam spring more than 27mm.

(Removal)

① Pry the pinch roller and the roller cap to remove them as shown in Fig. 2-25-1.

② Remove the pinch spring and the pinch cam spring.

(Installation)

① Install the pinch cam spring and the pinch spring making sure that the pinch arm, the pinch slider, and the pinch lever are composed as shown in Fig. 2-25-2.

② Install the pinch roller so that the side, with the widest aluminium bushing, is on the roller cap side. Push the roller cap inside to secure the pinch roller.(Refer to Fig. 2-25-3)

**Note:** There are two types of pinch rollers as shown in Fig. 2-25-3. Each should be installed in the direction shown below.

**(Type A)**

The side on which aluminum is wider is attached the roller cap.

**(Type B)**

The convex portion is attached on the roller cap.

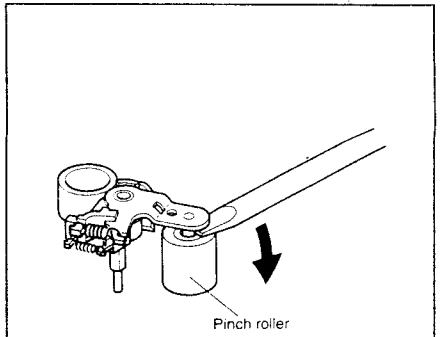



**Fig. 2-25-1**

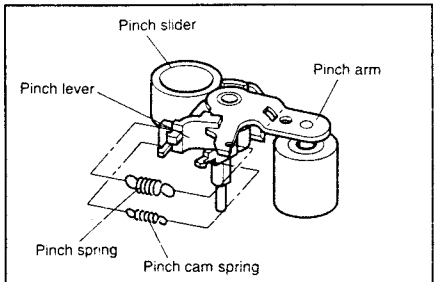



**Fig. 2-25-2**

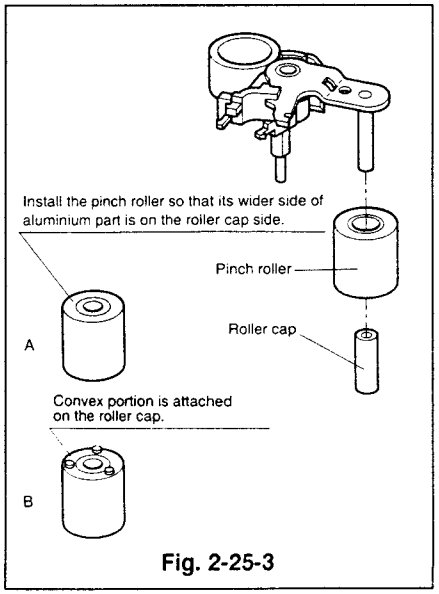

Install the pinch roller so that its wider side of aluminium part is on the roller cap side.
Pinch roller
Roller cap
A
Convex portion is attached on the roller cap.
B

**Fig. 2-25-3**

## 2-26 Mode Switch

(Removal)

① Remove the pinch cam cap, the pinch roller arm assembly, the pinch cam, and the takeup guide gear. (Refer to Para. 2-24 for the removal method.)
② Unsolder the five soldered terminals connecting the PCB-HA/AUDIO to the mode switch. (Refer to Fig. 2-26-1).
③ Unfasten two catches holding the mode switch. (Refer to Fig. 2-26-2.)
④ Slowly remove the mode switch, making sure that it is completely unsoldered.

(Installation)

① Insert the five pins and the boss of the mode switch shown in Fig. 2-26-1 into the matching holes of the PCB-HA/AUDIO. Place the mode switch on the main plate so that the matching mark of the gear pinch aligns with that of the mode switch and fasten it with the catches as shown in Fig. 2-26-3. (Also make sure that the matching mark of the gear joint aligns with that of the gear pinch.)
② Install the takeup guide gear, the pinch cam, the pinch roller arm assembly, and the pinch cam cap. (Refer to Para. 2-24 for the installation method.)

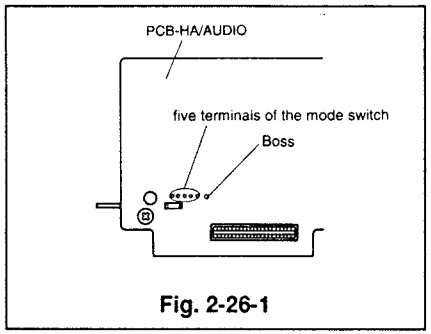



Fig. 2-26-1

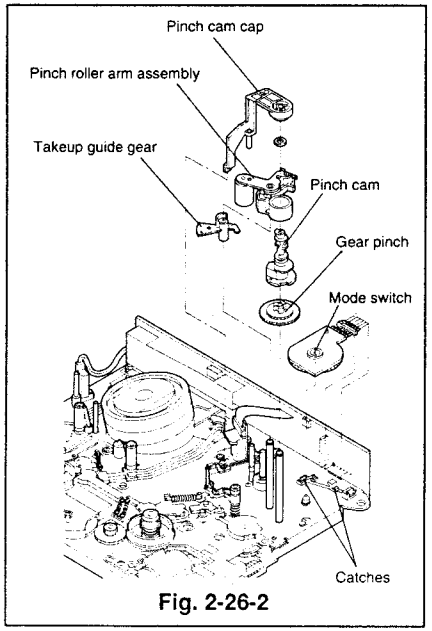



Fig. 2-26-2

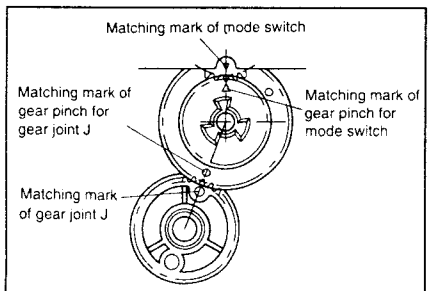

Matching mark of mode switch
Matching mark of gear pinch for gear joint J
Matching mark of gear pinch for mode switch
Matching mark of gear joint J

Fig. 2-26-3



## 2-27 FE Head (Refer to Fig. 2-27-1.)

(Removal)

① Disconnect the lead connector, connected to the FE head.
② Remove the screw(ⓐ) to remove the FE head.

(Installation)

① Secure the FE head with the screw(ⓐ) and connect the lead connector to the FE head. (Route the lead connector, which is fastened with the catch as shown in Fig. 2-27-1, through the hook of the main plate.)

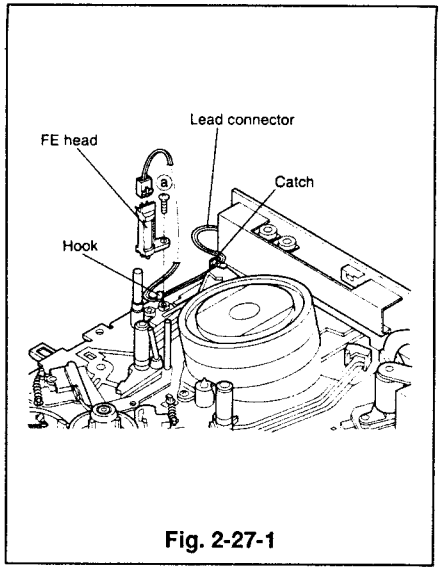



Fig. 2-27-1

## 2-28 Reel Belt and Belt Pulley

(Removal)

① Unfasten the reel belt from the capstan motor and the belt pulley.
② Release the belt pulley as shown in Fig. 2-28-1 and raise the belt pulley upward to remove it.

(Installation)

**Note:** When installing the reel belt, make sure it is clean and free of grease.(Clean with dry gauze only)

① Fasten the belt pulley to the shaft.(When fixing the belt pulley to the shaft of the idler assembly, make sure that the three convex parts of the washer fixed to the shaft enter the matching dents.
② Secure the belt pulley with the new cut washer.
③ Install the reel belt on the capstan motor and the belt pulley, taking care that the belt is not twisted.

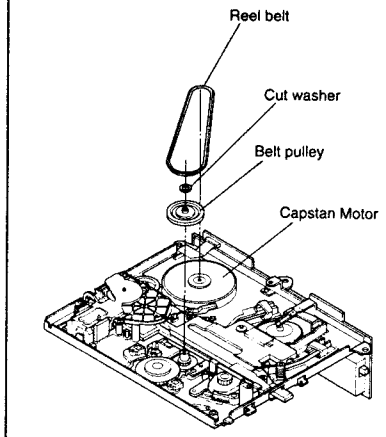



Fig. 2-28-1

## 2-29 Loading Motor Assembly, Pulley Worm J, Loading Motor Belt, and Gear A

(Removal)

① Unfasten the reel belt. (Refer to Para. 2-28 for the removal method.)

② Remove the three screws(ⓐ,ⓑ and ⓒ) as shown in Fig. 2-29-2 and unfasten the three catches to remove the loading motor assembly (which holds the motor holder ). (Refer to Fig. 2-29-1)

③ Remove the loading motor belt from the motor pulley. (Refer to Fig. 2-29-3.)

④ Unfasten the catches holding the motor holder to remove the loading motor assembly. (Refer to Fig. 2-29-3.)

⑤ Remove the pulley worm J, first the end attached to the part A shown in Fig. 2-29-3 and then the other end.

⑥ Remove the cut washer and unfasten the catch holding Gear A. Remove Gear A.

⑦ Pull the motor pulley to remove it from the loading motor.

⑧ Disconnect the wires from the loading motor.

(Installation)

① Solder the leads to the loading motor.(Red lead wire to the positive terminal and white lead wire to the negative terminal.)

② Install the motor pulley on the loading motor so that the space between the loading motor and the outer edge of the motor pulley is 8.5±0.1mm. (Refer to Fig. 2-29-4)

③ Install the loading motor assembly so that the label on it faces part B, shown in Fig. 2-29-3.

④ Apply grease (G)[859D055O50] to the areas shown in Fig. 2-29-4 of the new pulley worm J. Install the pulley worm J, first the end attached to the part C shown in Fig.2-29-3 and then the other end.

⑤ Fix the gear A to the shaft of the motor holder J and secure it with new cut washers.

⑥ Lift the end attached to the part A shown in Fig. 2-29-3 of the pulley worm J. Fasten the loading motor belt on the pulley worm J and the motor pulley, taking care not to twist the belt.

⑦ Install the loading motor assembly(which holds the motor holder) in the position shown in Fig. 2-29-2 and secure it with the three screws(ⓐ,ⓑ and ⓒ).

⑧ Install the loading motor belt. (Refer to Para. 2-28 for the installation method.)

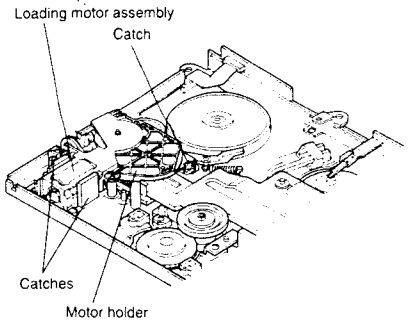



Fig. 2-29-1

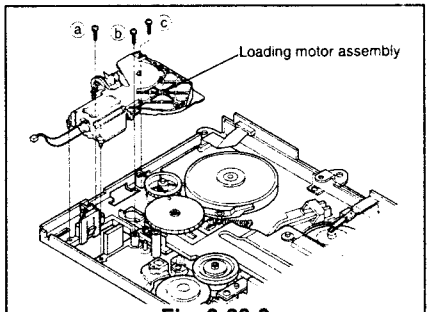



Fig. 2-29-2

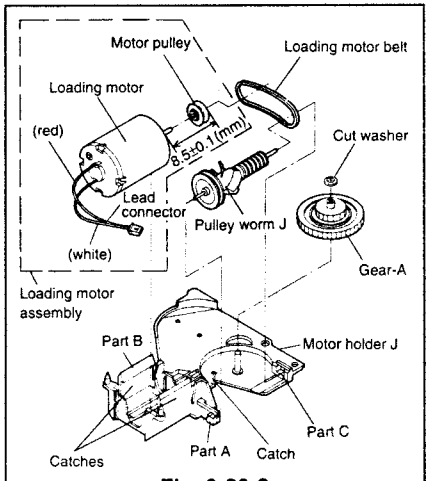



Fig. 2-29-3



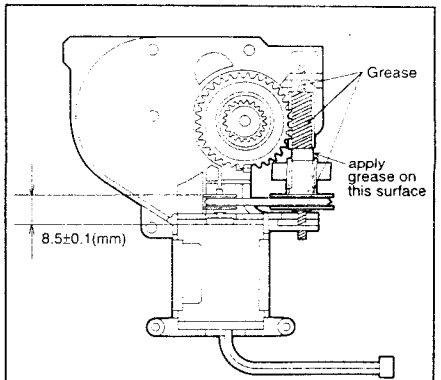



Fig. 2-29-4

## 2-30 Main Gear J

(Removal)

① Remove the reel belt. (Refer to Para. 2-28 for the removal method.)

② Remove the loading motor assembly (which holds the motor holder). (Refer to Para. 2-29 for the removal method.)

③ Remove the cut washer mounted on the main gear J.

④ Raise the main gear J upward to remove it.

(Installation)

① Apply grease (G) [859D055O50] to the outside cogs, the groove of the cam and to the inside small cogs of the new main gear J. (Refer to Fig. 2-30-2.)

② Make sure that the cam plate B is set to the right side, viewed from the bottom side of the deck. (Eject mode)

③ Push the axis of the main brake (TU) in the direction shown by the arrow until the main brake release lever moves freely. Turn the deck the right side up and shift the axis of the main brake release lever in the direction shown by the arrow. Then fix the main gear J to the shaft, with the axis of the main brake release lever held in place. Secure the main plate J with the cut washer. (Refer to Fig. 2-30-3) (Insert the pin of the capstan brake in the outside groove of the main gear J and align the matching marks of gear joint J and the main gear J.) (Refer to Fig. 2-30-4)

④ Install the loading motor assembly (which holds the motor holder) and the reel belt. (Refer to Para. 2-28 for the installation method.)

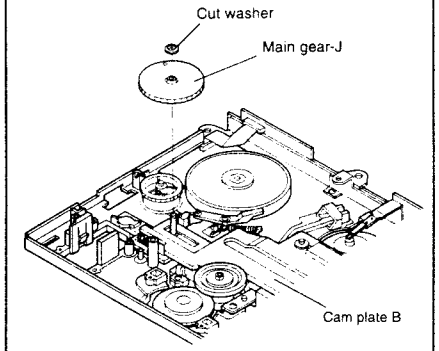



Fig. 2-30-1

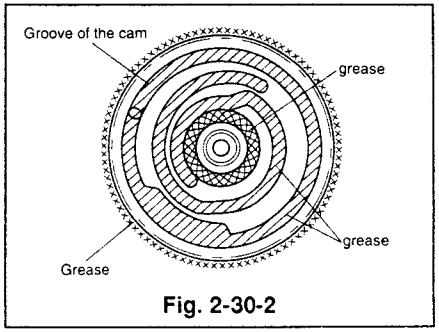



Fig. 2-30-2

## 2-31 Gear Joint J

(Removal)

① Remove the reel belt. (Refer to Para. 2-28 for the removal method.)

② Remove the loading motor assembly (which holds the motor holder). (Refer to Para. 2-29 for the removal method.)

③ Raise the gear joint J upward to remove it. (Refer to Fig. 2-31-1)

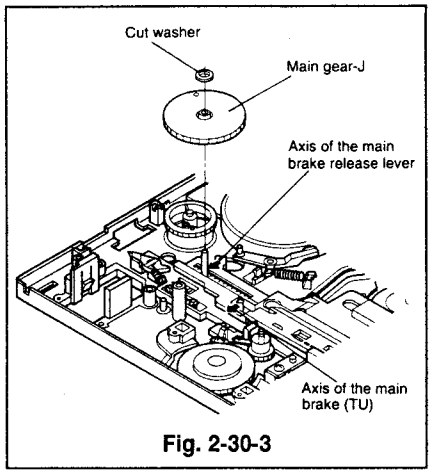



Fig. 2-30-3

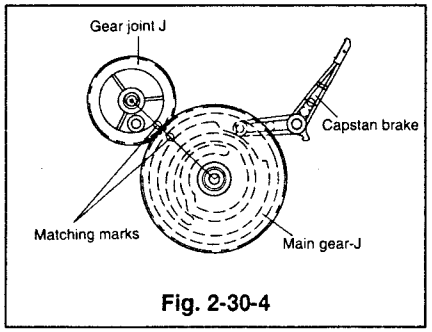



Fig. 2-30-4

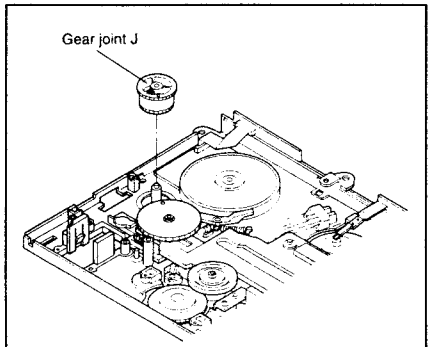



Fig. 2-31-1



(Installation)

① Apply grease (PG-641)[859D055O30] to the new gear joint J on the whole circumference of the small cogwheel as shown in Fig. 2-31-2.

② Fix the gear joint J to the shaft so that the matching mark of the gear joint J aligns with that of the main gear as shown in Fig. 2-30-4.

③ Turn the deck the right side up, make sure that the matching mark of the gear pinch aligns with that of the gear joint J. (When turning the deck, hold the gear joint J, in place.)(Refer to Fig. 2-31-3)

④ Install the loading motor assembly(which holds the motor holder). (Refer to Para. 2-29 for the installation method.)

⑤ Install the reel belt. (Refer to Para. 2-28 for the installation method.)

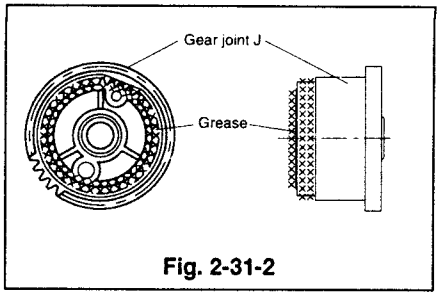



Fig. 2-31-2

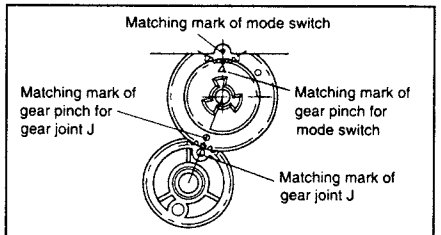

Matching mark of mode switch
Matching mark of gear pinch for gear joint J
Matching mark of gear pinch for mode switch
Matching mark of gear joint J

Fig. 2-31-3

## 2-32 Capstan Brake and Capstan Brake Spring

(Removal)

① Remove the reel belt. (Refer to Para. 2-28 for the removal method.)

② Remove the loading motor assembly(which holds the motor holder). (Refer to Para. 2-29 for the removal method.)

③ Remove the main gear J. (Refer to Para. 2-30 for the removal method.)

④ Raise the capstan brake upward to remove it along with the capstan brake spring. (Refer to Fig. 2-32-1.)

(Installation)

① Install the capstan brake and the capstan brake spring.

② Install the main gear J. (Refer to Para. 2-30 for the installation method.)

③ Install the loading motor assembly(which holds the motor holder). (Refer to Para. 2-29 for the installation method.)

④ Fasten the reel belt. (Refer to Para. 2-28 for the installation method.)

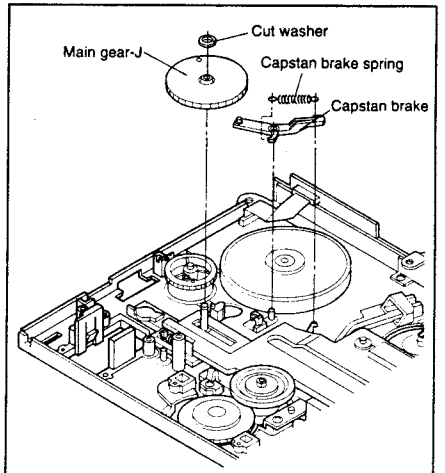



Fig. 2-32-1

## 2-33 Plate J, Roller B, and Cam Plate B

(Removal)

① Remove the two screws (ⓐ and ⓑ) to remove the plate J. (Fig. 2-33-1)
② Take off the cut washer fixed to the shaft of the loading arm (TU) to remove the roller B.
③ Remove the reel belt.
(Refer to Para. 2-28 for the removal method.)
④ Remove the belt pulley.
(Refer to Para. 2-28 for the removal method.)
⑤ Remove the loading motor assembly (which holds the motor holder).
(Refer to Para. 2-29 for the removal method.)
⑥ Remove the main gear J.
(Refer to Para. 2-30 for the removal method.)
⑦ Slide the cam plate B to the left (the direction shown by the arrow) to remove it.

(Installation)

① Apply grease (G) [859D055O50] to the area shown in Fig. 2-33-2 of the new cam plate B.
② Align the loading arms TU and SP so that the matching marks of the cogs align. (Refer to Fig. 2-37-3)
③ Passing part A of the cam plate B under cam spring B insert it into the hole on the side of the main plate, as shown by the continuous line. (Refer to Fig. 2-33-1)
④ While keeping the rear section of cam plate B raised, align the cam plate B and the cam gear R so that the ○ mark on the cam plate B aligns with the part A on the cam gear R as shown in Fig.2-33-3 (Fig. A). Still keeping the rear of cam plate B raised, slide it to the right until the △ mark on cam plate B and aligns with the part B on the cam gear R, refer Fig. 2-33-3 (Fig. B). From this position lower the rear of the cam plate B unto the already aligned loading gears TU and SP, refer 2 above. Shift the sub off lever and the main brake TU in the directions shown by the arrows to install them. (Refer to Fig. 2-33-1)
⑤ Fix the roller B to the shaft of the loading arm (TU) and secure it with the new cut washer.
⑥ Install the plate J and secure it with the two screws (ⓐ and ⓑ).
⑦ Install the main gear J.
(Refer to Para. 2-30 for the installation method.)
⑧ Install the loading motor assembly (which holds the motor holder).
(Refer to Para. 2-29 for the installation method.)
⑨ Install the belt pulley.
(Refer to Para. 2-28 for the installation method.)
⑩ Fasten the reel belt.
(Refer to Para. 2-28 for the installation method.)

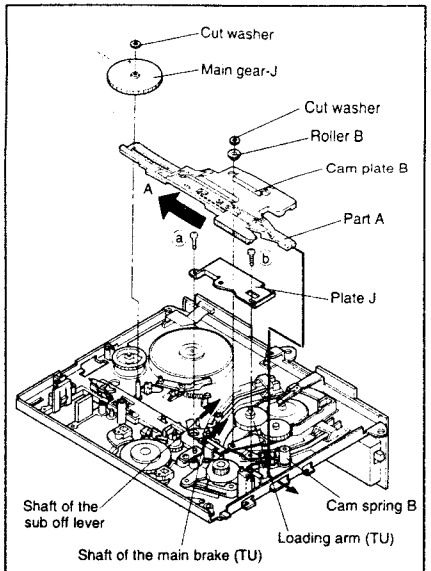



Fig. 2-33-1

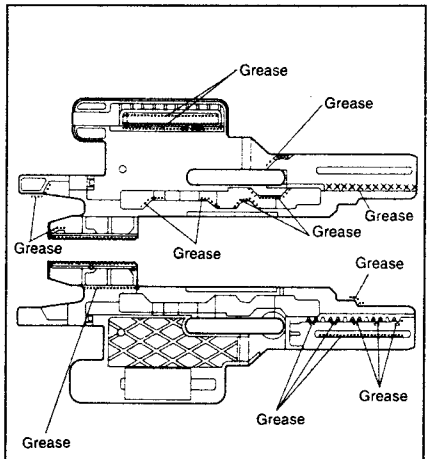



Fig. 2-33-2



## 2-34 Cam Gear R, Charge Lever, and Tension Off Lever

(Removal)

① Remove the cassette housing.
(Refer to Para. 2-1 for the installation method.)
② Turn the deck the right side up and detach the tension spring. (Refer to Fig. 2-34-4.)
③ Remove the charge assembly.
(Refer to item ② of Para. 2-18 for the removal method.)
④ Remove the reel belt and the pulley belt.
(Refer to Para. 2-28 for the removal method.)
⑤ Remove the loading motor assembly (which holds the motor holder).
(Refer to Para. 2-29 for the removal method.)
⑥ Remove the main gear J.
(Refer to Para. 2-30 for the removal method.)
⑦ Remove the plate J, the roller B, and the cam plate B.
(Refer to Para. 2-33 for the removal method.)
⑧ Raise the cam gear R upward to remove it.
(Refer to Fig. 2-34-1.)
⑨ Remove the charge lever. (Refer to Fig. 2-34-1.)
⑩ Remove the tension off lever. (Refer to Fig. 2-34-1.)

(Installation)

① Let part A pass through part B shown in Fig. 2-34-1 to install the tension off lever.
② Fix the charge lever to the shaft.
③ Apply grease (PG-641) [859D055O30] to the area shown in Fig. 2-34-2 of the new cam gear R.
(The groove and the flank of the outside circumference.)
④ Insert the cam gear R so that part A is on the upside, with the charge lever set fully to the right end. Slowly turn the charge lever in the direction shown by the arrow until it enters the groove in the cam gear R.
(Refer to Fig. 2-34-3)
⑤ Install the cam plate B, the roller B, and the plate J.
(Refer to Para. 2-33 for the installation method.)
⑥ Install the main gear J.
(Refer to Para. 2-30 for the installation method.)
⑦ Install the loading motor assembly (which holds the motor holder).
(Refer to Para. 2-29 for the installation method.)
⑧ Install the belt pulley and the reel belt.
(Refer to Para. 2-28 for the installation method.)
⑨ Hook the tension spring in the position shown in Fig. 2-34-4.
⑩ Install the charge assembly.
(Refer to Item ⑤ of Para. 2-18 for the installation method.)
⑪ Install the cassette housing.
(Refer to Para. 2-1 about the installation method.)

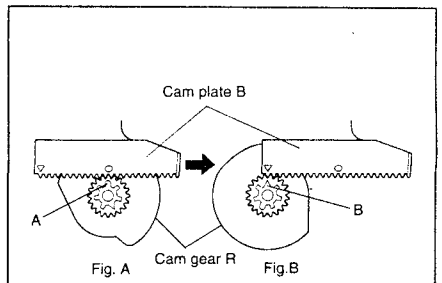



Fig. 2-33-3

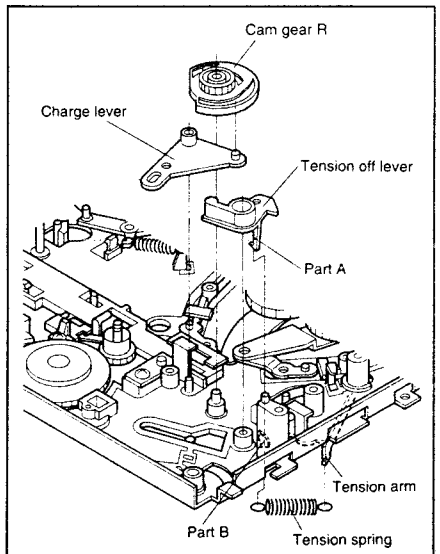



Fig. 2-34-1

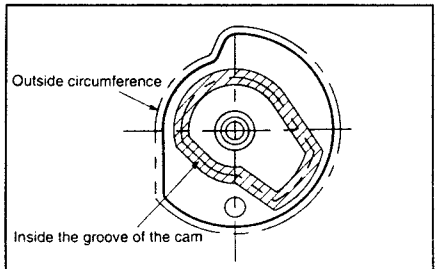



Fig. 2-34-2

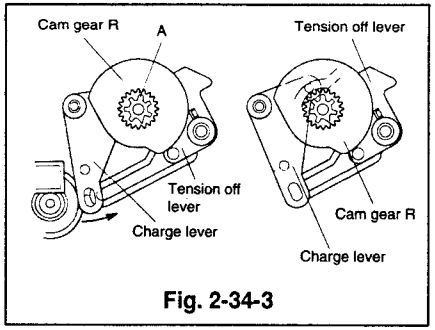



Fig. 2-34-3

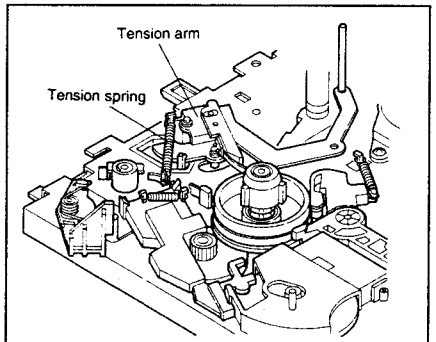



Fig. 2-34-4

## 2-35 Reel Idler Assembly

(Removal)

① Remove the reel belt and the belt pulley.
(Refer to Para. 2-28 for the removal method.)

② Remove the two screws (ⓐ and ⓑ) holding the reel idler assembly.

③ Unfasten the two catches shown in Fig. 2-35-2 and push the reel idler assembly to remove it, with the deck right side up.

(Installation)

① Insert the part B of the reel idler assembly under the plate cam B as shown in Fig. 2-35-1 and ensure projection A enters the hole on the main plate. Position the reel idler assembly so that its screw holes are aligned and secure it with the two screws (ⓐ and ⓑ).
(Fig. 2-35-3 shows its appearance, viewing from the top.)

② Install the belt pulley and the reel belt.
(Refer to Para. 2-28 for the installation method.)

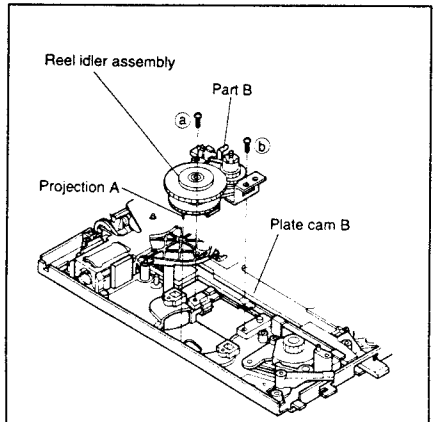



Fig. 2-35-1

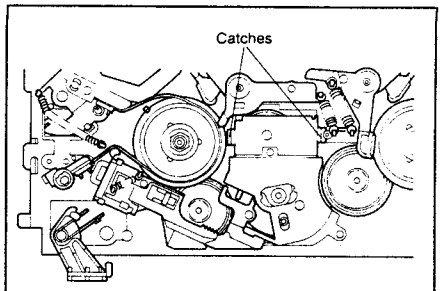



Fig. 2-35-2

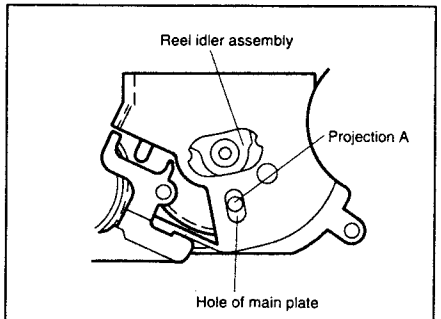



Fig. 2-35-3

## 2-36 Cam Plate C and Cam Spring C

(Removal)

① Remove the reel belt and the belt pulley. (Refer to Para. 2-28 for the removal method.)

② Remove the reel idler assembly. (Refer to Para. 2-35 for the removal method.)

③ Remove the loading motor assembly (which holds the motor holder). (Refer to Para. 2-29 for the removal method.)

④ Remove the main gear-J. (Refer to Para. 2-30 for the removal method.)

⑤ Remove the plate-J, the roller-B, and the cam plate-B. (Refer to Para. 2-33 for the removal method.)

⑥ Remove the cam spring-C. (Refer to Fig. 2-36-1.)

⑦ Slide the cam plate-C to the left end.

⑧ Unfasten the catch and raise the cam plate-C to remove it. (refer to Fig. 2-36-1.)

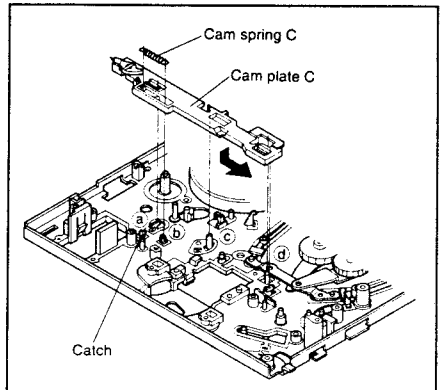



Fig. 2-36-1

(Installation)

① Apply specified grease to the area (A~I) shown in Fig. 2-36-2 of the new cam plate-C.
Area A : (G) [859D055O50]
Area B~I : (PG641) [859D055O30]

② Position the cam plate-C so that the four points(ⓐ, ⓑ, ⓒ and ⓓ) shown in Fig. 2-36-1 enter into the matching holes and slide it to the right end.

③ Install the cam spring-C.

④ Install the cam plate-B, the roller-B, and the plate-J. (Refer to Para. 2-33 for the installation method.)

⑤ Install the main gear-J. (Refer to Para. 2-30 for the installation method.)

⑥ Install the loading motor assembly (which holds the motor holder). (Refer to Para. 2-35 for the installation method.)

⑦ Install the reel idler assembly. (Refer to Para. 2-35 for the installation method.)

⑧ Install the belt pulley and the reel belt. (Refer to Para. 2-28 for the installation method.)

## 2-37 Loading Arm (SP, TU)

(Removal)

① Remove the reel belt and the belt pulley. (Refer to Para. 2-28 for the removal method.)

② Remove the loading motor assembly (which holds the motor holder). (Refer to Para. 2-29 for the removal method.)

③ Remove the main gear-J. (Refer to Para. 2-30 for the removal method.)

④ Remove the plate-J, the roller-B, and the cam plate-B. (Refer to Para. 2-33 for the removal method.)

⑤ Raise the loading arms upward, first SP and then TU, to remove them. (Refer to Fig. 2-37-1)

(Installation)

① Move the takeup and supply tape guides to the unloaded position. If the supply tape guide is in the loaded position it will be necessary to shift the tension arm in the direction of the arrow in Fig. 2-37-2 at the same time moving the supply tape guide to the unloading position.

② Place the new loading arm (TU) in the position shown in Fig. 2-37-1, then place the loading arm (SP) in the position shown in Fig. 2-37-1 at the same time aligning the marks on the cogs, refer Fig. 2-37-3(shaded area).

③ Apply grease (G)[859D055O50] to the area that touches the cogwheel of the loading arm (TU) when the loading arms (SP and TU) are shifted fully to the loading direction. Apply grease (G)[859D055O50] to the gear portion that meshes with the plate cam B. (Refer to Fig.2-37-4.)

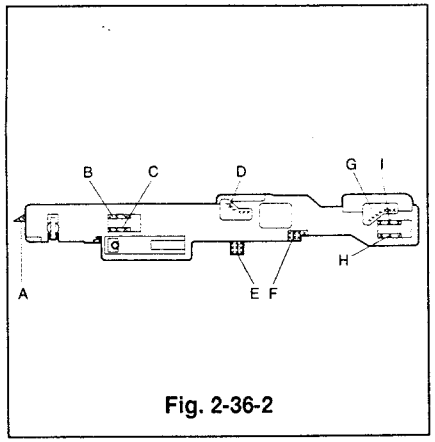



Fig. 2-36-2

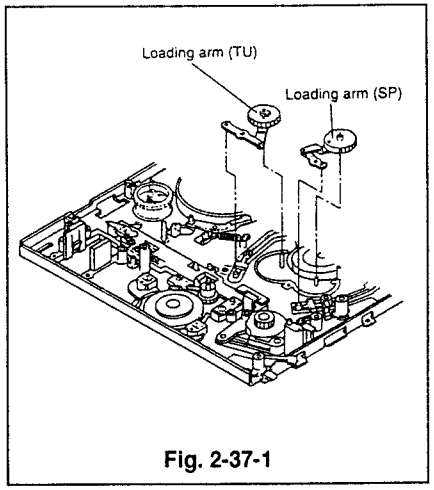



Fig. 2-37-1

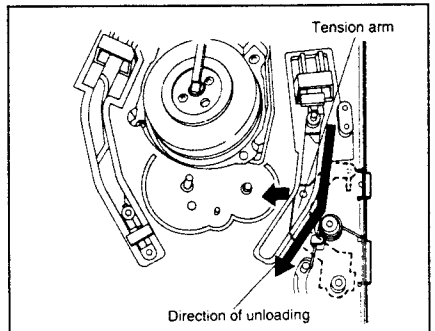



Fig. 2-37-2



④ Install the cam plate-B, the roller-B, and the plate-J. (Refer to Para. 2-33 for the installation method.)

⑤ Install the main gear-J. (Refer to Para. 2-30 for the installation method)

⑥ Install the loading motor assembly (which holds the motor holder). (Refer to Para. 2-29 for the installation method.)

⑦ Install the belt pulley and the reel belt. (Refer to Para. 2-28 for the installation method.)

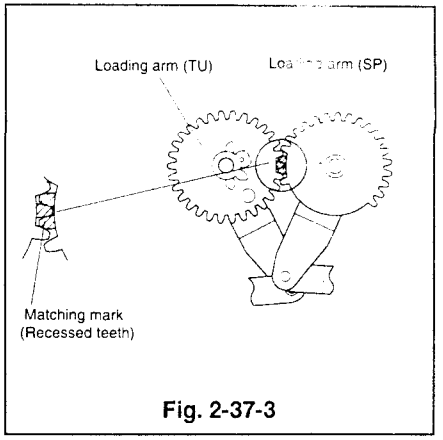



Fig. 2-37-3

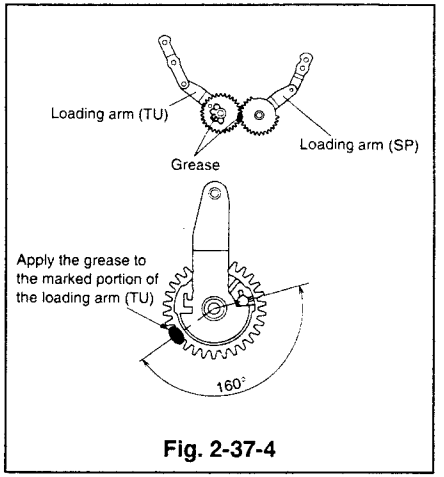



Fig. 2-37-4

## 2-38 Capstan Motor and Lead Card

**Note:** During removal and installation of the capstan motor, take care not to touch or score the tape running surface, and ensure there is no grease on the outside of the motor's rim.

(Removal)

① Unfasten the reel belt.

② Disconnect the lead card, connected to the PCB of the capstan motor and the PCB-HA/AUDIO. (Refer to Fig. 2-38-1.)

③ Turn the deck the right side up, remove the three screws shown in Fig. 2-38-2 to remove the capstan motor.

**Note:** During removal, support the capstan motor assembly when it is not secured by its fastening screws. Take care not to touch other parts.

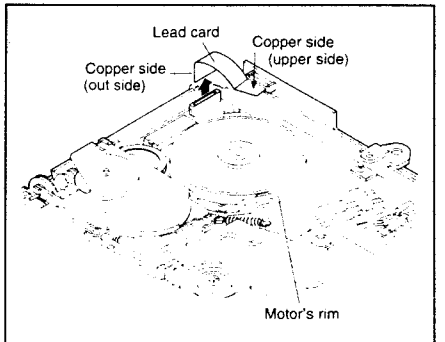



Fig. 2-38-1

*(Installation)*

① Reverse the deck, position the capstan motor so that the capstan brake is on the outside of the capstan motor.
② Turn the deck the right side up, secure the capstan motor with the three screws shown in Fig. 2-38-2.
③ Bend the new lead card as shown in Fig.2-38-3 and connect it to the connectors of the PCB of the capstan motor and the PCB-HA/AUDIO so that copper side appears as shown in Fig. 2-38-1. Take care not to touch the rotor of the capstan motor.
④ Install the reel belt.
(Refer to Para. 2-28 for the installation method.)

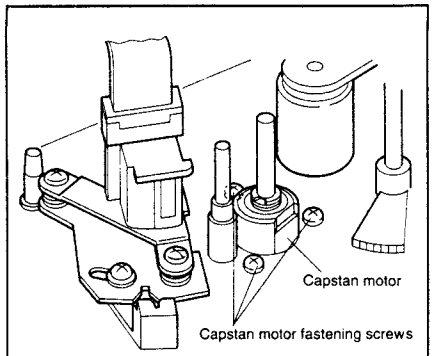



**Fig. 2-38-2**

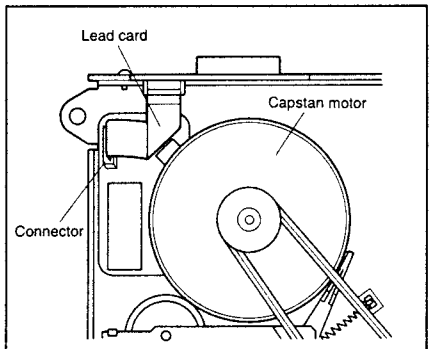



**Fig. 2-38-3**

## 2-39 A/C Head Assembly

(Removal)

**Note:** During installation of A/C head assembly, take care not to touch or score the tape running surface.

① Lift the stopper shown in Fig. 2-39-1 upward and disconnect the lead connector (bare wire), which is connected to the PCB-A/C-HEAD.
② Remove the two screws (ⓐ and ⓑ) holding the A/C head assembly to the main plate, and to remove the A/C head assembly. (Refer to Fig. 2-39-2.)

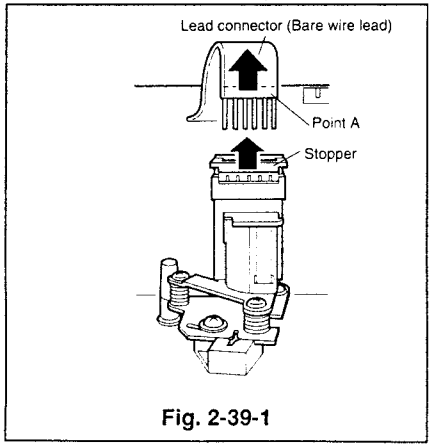



**Fig. 2-39-1**



(Installation)

① Make sure that the spring(A/C earth spring) is as shown in Fig. 2-39-3.
② Place the A/C head assembly in the position shown in Fig. 2-39-2 and secure it with the two screws(ⓐ and ⓑ).
③ Shift part A downward and lower the stopper. Connect the lead connector to the connector on the PCB-A/C-HEAD as shown in Fig. 2-39-1.

**Note:** Conduct the A/C head adjustment and the phase adjustment as outlined in Para. 3-3 and 3-4 after the new A/C head is installed.

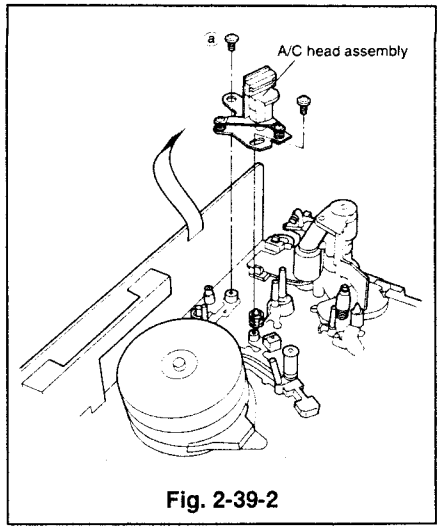



**Fig. 2-39-2**

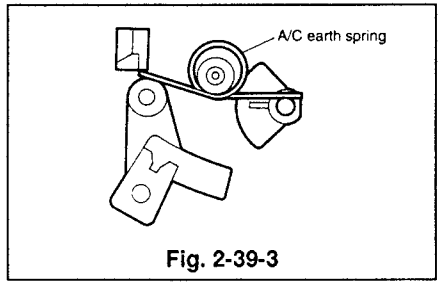



**Fig. 2-39-3**

## 2-40 A/C Head

(Removal)

① Disconnect the lead connector connected to the PCB-A/C-HEAD. (Refer to Item ① of Para. 2-39 for the removal method.)
② Remove the three screws(ⓐ,ⓑ and ⓒ), shown in Fig. 2-40-1 to remove the A/C head.
③ Unsolder the PCB-A/C HEAD from the A/C head.(Refer to Fig. 2-40-1.

(Installation)

① Install the A/C head with the A/C spring and the three screws(ⓐ,ⓑ and ⓒ) as shown in Fig. 2-40-1.

**Note:** When installing the A/C head on the A/C plate, the base plate of the A/C head must be parallel to the A/C plate and the spacing between them should be as specified in Fig. 2-40-2.

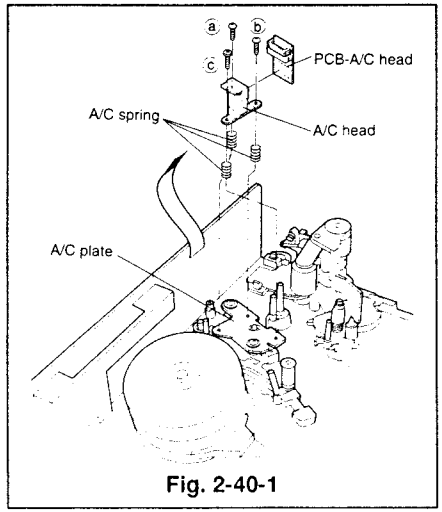



**Fig. 2-40-1**

② Connect the lead connector to the PCB-A/C-HEAD. (Refer to Item ③ of Para. 2-39 for the installation method.)
③ Perform the A/C head adjustment as outlined in Para. 3-3 and the phase adjustment as outlined in Para. 3-4.

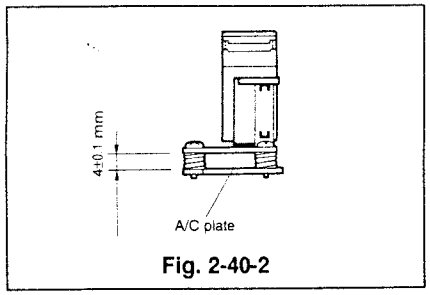


Fig. 2-40-2

## 2-41 Supply & Takeup Guide Rollers

(Removal)
① Loosen the set screws with a hexagon key so that the guide rollers rotate freely.
② Turn the height adjustment screws at the top of the guide rollers counterclockwise with a height adjustment screwdriver to loosen them. Lift the guide roller upward to remove them from the tape guides.(Refer to Fig. 2-41-1)

(Installation)
① Make sure that the rubber rings are fixed to the fastening thread portions of the new guide rollers.
② Perform the following steps ③ to ⑤ to seat in the rubber rings.
③ Slowly turn the guide rollers clockwise until the rubber rings are firmly seated.
④ Turn the guide rollers a further 1/6 of a turn clockwise and then turn them one turn counter-clockwise.
⑤ Slowly turn the guide rollers clockwise until they become firmly seated again. Turn the guide rollers a further 1/6 of a turn clockwise.
⑥ Secure the guide rollers lightly with the set screws. Perform the mechanism check and adjustment of the FM envelope as outlined in Para. 3-2.

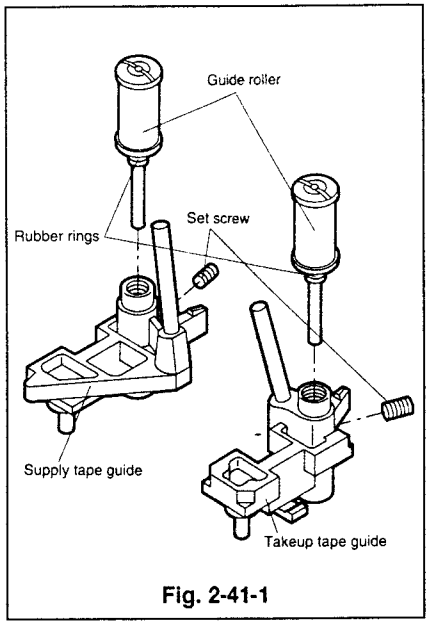


Fig. 2-41-1



## 2-42 Cleaning Roller, Cleaning Arm, Cleaning Lever, and Cleaning Spring

(Removal)
① Remove the PCB-HA/AUDIO. (Refer to Para. 2-8 for the removal method.)
② Unfasten the catch to remove the cleaning roller. (Refer to Fig. 2-42-1)
③ Turn part A of the cleaning assembly clockwise as shown in Fig. 2-42-2 to release the catch part B Fig. 2-42-2 and Fig. 2-42-3(c). Release the catch part E and remove the cleaning assembly from the shaft.
④ Remove the cleaning spring to detach the cleaning arm and the cleaning lever.

(Installation)
① Attach the cleaning arm to the cleaning lever and turn it clockwise as shown in Fig. 2-42-3(c). Make sure that the cleaning arm and the cleaning lever turn without binding.
② Hook one end of the cleaning spring with the boss (point C), projecting from the cleaning arm, and the other end to point D of the cleaning lever as shown in Fig. 2-42-3(d).
③ Place the cleaning assembly in the position shown in Fig. 2-42-1, and in the direction shown in Fig. 2-42-2(b). Turn the part A, shown in Fig. 2-42-2, counterclockwise to set the part B under the A/C plate of the A/C head assembly. Make sure that the spring hooks with the boss of the main plate shown in Fig. 2-42-2. Shift the part A in the direction shown by the arrow and release to make sure that it returns.
④ Insert the cleaning roller into the position shown in Fig. 2-42-1 to install it.

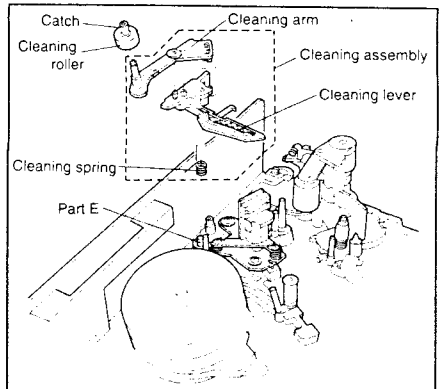


Fig. 2-42-1

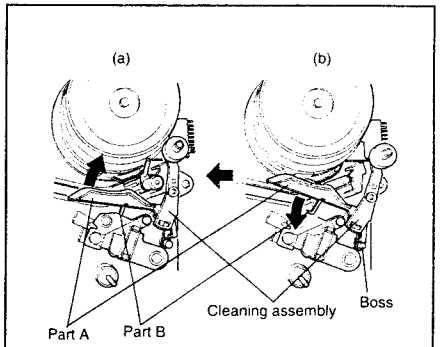


Fig. 2-42-2

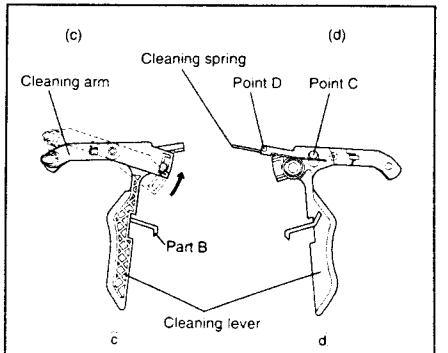


Fig. 2-42-3

## 2-43 Supply & Takeup Tape Guide Assemblies

(Removal)

① Remove the cassette housing.
(Refer to Para. 2-1 for the removal method.)

② Remove the PCB-HA/AUDIO.
(Refer to Para. 2-8 for the removal method.)

③ Remove the cleaning assembly.
(Refer to item ④ of Para. 2-42 for the removal method.)

④ Unscrew the three screws (ⓐ, ⓑ and ⓒ) to remove the drum base together with the drum assembly.
(Refer to Fig. 2-43-1.)

⑤ Slide the supply and takeup tape guide assemblies to the end of the loaded position by either of the following methods.

- Supply voltage (approximately +5V voltage on the red wire) to the loading motor as in ② of the removal method in Para. 2-19.
- Turn part A of pulley worm J by hand, in the direction shown by the arrow (a) as shown in Fig. 2-43-3. Raise the supply and takeup tape guide assemblies upward to remove them.

(Installation)

① Apply grease (PG-641) [859D055O30] to the area shown in Fig. 2-43-2 of the supply tape guide assembly.

② Install the supply and takeup tape guide assemblies so that they respectively enter the holes at the ends of the loading arms (SP and TU)attached to the reverse side of the deck as shown in Fig. 2-43-1.

③ Slide the supply and takeup tape guide assemblies to the unloaded position, by either of the following methods so that the upper hole of the mode switch aligns with that of the cogwheel as shown in Fig. 2-43-4.

- Supply voltage (approximately 5V ), reversing the polarity used in ④ of the removal method, to the loading motor as ⑤ of the installation method in Para. 2-19.
- Turn part A of the pulley worm J by hand, in the direction shown by the arrow (b) as shown in Fig. 2-43-3.

④ Make sure that the hole of the gear joint J aligns with the matching mark of the main plate, and the matching mark of the gear pinch with that of the mode switch as shown in Fig. 2-43-5.

⑤ Install the drum base on which the drum assembly is attached and secure it with the three screws (ⓐ,ⓑ and ⓒ) as shown in Fig. 2-43-1.
(Tighten the screws in the order ⓐ→ⓑ→ⓒ.)

⑥ Install the cleaning assembly.
(Refer to Item ③ of Para. 2-42 for the installation method.)

⑦ Install the PCB-HA/AUDIO.
(Refer to Para. 2-8 for the installation method.)

⑧ Install the cassette housing.
(Refer to Para. 2-1 for the installation method.)

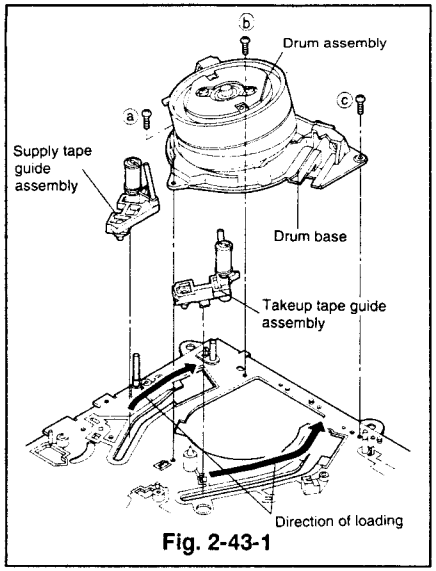


Fig. 2-43-1

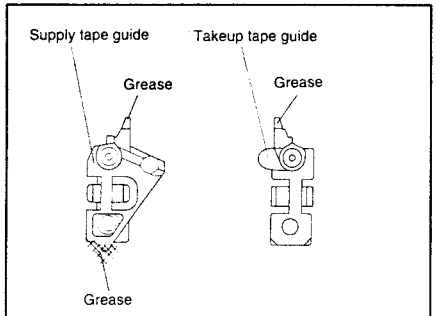


Fig. 2-43-2

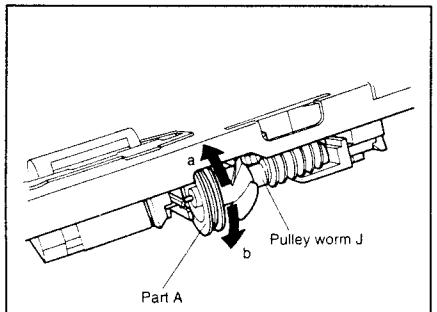


Fig. 2-43-3



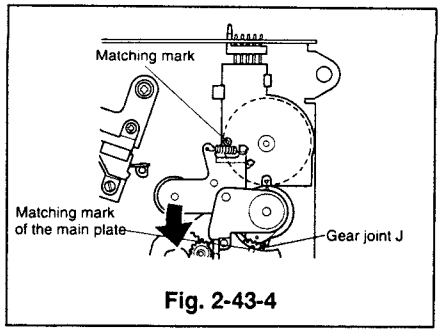
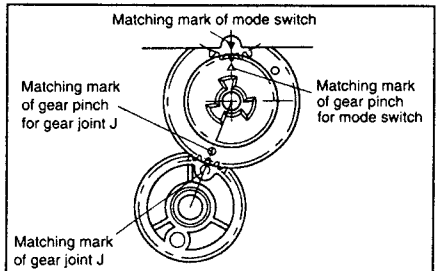


Fig. 2-43-4


Matching mark of mode switch
Matching mark of gear pinch for gear joint J
Matching mark of gear pinch for mode switch
Matching mark of gear joint J
Fig. 2-43-5

## 2-44 Drum Base Spring

(Removal)

① Remove the drum base spring between the drum base and the drum assembly. (Refer to Fig. 2-44-1.)

**Note:** If the drum base spring is difficult to remove, remove the drum assembly in advance. (Refer to Para.2-10)

**Note:** During removal and installation of the drum assembly, do not touch the tape running surface with your hands.

(Installation)

① Set the drum base spring in the gap between the drum base and the drum assembly. Make sure that the drum base spring is secure enough not to fall out.

② Apply grease (PG-641) [859D055O30] to the area of the drum base spring as shown in Fig. 2-44-1.

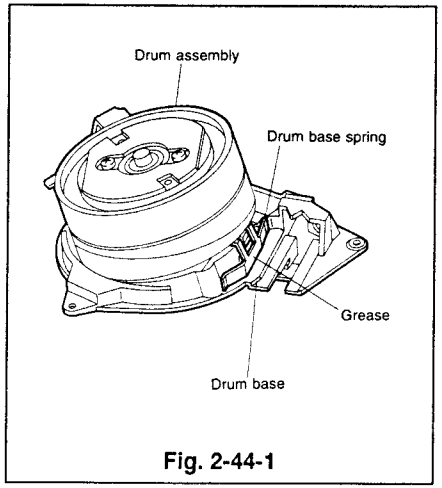


Fig. 2-44-1

## 3. Interchangeability Adjustment of the Mechanism

**Note1:** Tracking may need to be preset during interchangeability adjustments of the mechanism. Digital tracking is preset by short circuiting TP5A and TP5B on the PCB-MAIN.

**Note2:** The adjustments are performed in the playback mode, using the stair step signal of an alignment tape. Connect an oscilloscope to TP2A and external Trig. from TP2H, unless otherwise specified.

### 3-1 Adjustment of Back-Tension and Tension Pole Position

Run a blank tape for several minutes to break in the reel disks and the transport before making the adjustment.

① Cut out the alignment tape [PM6KH3 : 859C339O30] as shown in Fig. 3-1-2. This allows the boss to be adjusted while playing the tape by inserting hexagon wrench through the round hole in the cassette housing shown in Fig. 3-1-1.
(Take care not to allow fragments of the cassette case inside the cassette tape.)

② Playback an alignment tape which has a cut out.

③ Make sure that the tip section A of the tension arm is between the divisions " 2 " and " 2.5 " on the main plate. (Fig. 3-1-1) (The divisions are numbered from the right to left.)

④ If tip section A of the tension arm is to the right of " 2 ", turn the boss clockwise.
If A is to the left of " 2.5 ", turn it counter-clockwise.

⑤ Insert a back tension measuring jig (Part No. 859C346060) and set the VCR to the playback mode.

⑥ When tape travel becomes steady, make sure that the reading of the Back Tension Measuring Jig is 50±6g-cm.

⑦ If the reading is high, replace the tension spring.

⑧ When tape travel is steady, check visually to make sure that the runout of the tension pole is 1mm or less. (Fig. 3-1-3)

⑨ If the runout is not within the specified value, replace the reel disk.

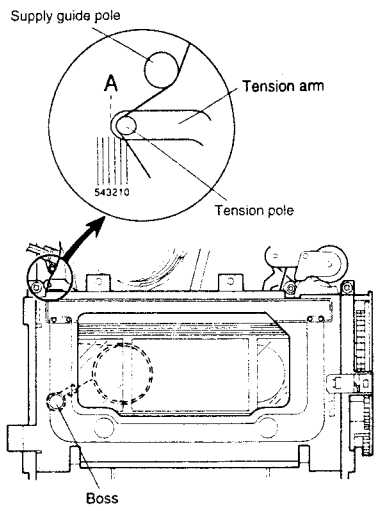



Fig. 3 - 1 - 1

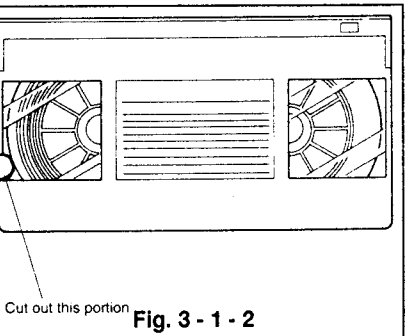



Fig. 3 - 1 - 2

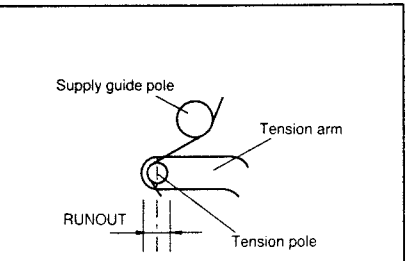



Fig. 3 - 1 - 3



### 3-2 Check and Adjustment of FM Envelope

#### 3-2-1 Guide Roller Adjustment

① Play back the alignment tape.
[PM6KH3 : 859C339O30]

② Preset tracking. (Refer to NOTE 1 in Para. 3.)

③ Check if the FM waveform is flat like A.
(Refer to Fig. 3-2-1)

④ Adjust the height of the supply guide roller if the leading portion (the entry side of the drum) of the FM waveform is not flat, like B or C. (Refer to Fig. 3-2-1) Adjust the height of the takeup guide roller if the trailing portion (the exit side of the drum) is not flat, like D or E.

#### 3-2-2 Adjustment of Supply Guide Roller Height

① Loosen the set screw until the supply guide roller is held lightly when rotated.

② The supply guide roller may be low if the leading portion (the entry side of the drum) of the FM waveform is like B, and high if like C. Turn the adjusting screw at the top of the roller to adjust the height of it so that the FM waveform is flat like A.

- Turn the adjusting screw counter-clockwise if the roller is low.
- Turn the adjusting screw clockwise if the roller is high.

③ Coarsely adjust the phase as in Item 3-3-4.

#### 3-2-3 Adjustment of Takeup Guide Roller Height

① Loosen the set screw until the takeup guide roller rotates lightly.

② The takeup guide roller may be low if the trailing portion (the exit side of the drum) of the FM waveform is like D, and high if like E. Turn the adjusting screw at the top of the roller to adjust the height so that the FM waveform is flat like A.

- Turn the adjusting screw counter-clockwise if the roller is low.
- Turn the adjusting screw clockwise if the roller is high.

③ Coarsely adjust the phase as in Item 3-2-4.

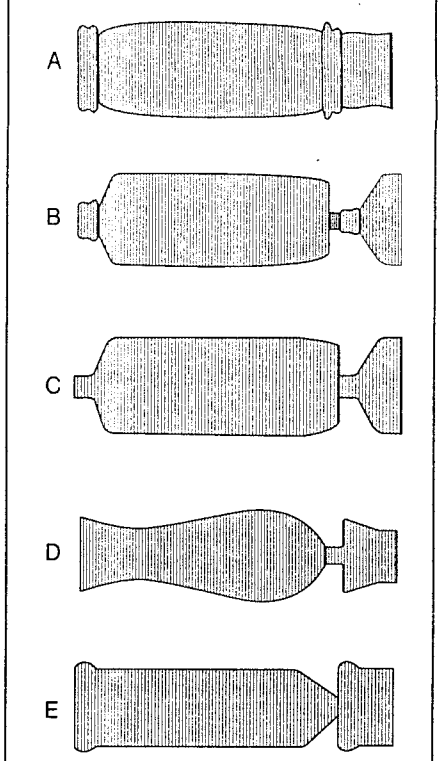



Fig. 3 - 2 - 1

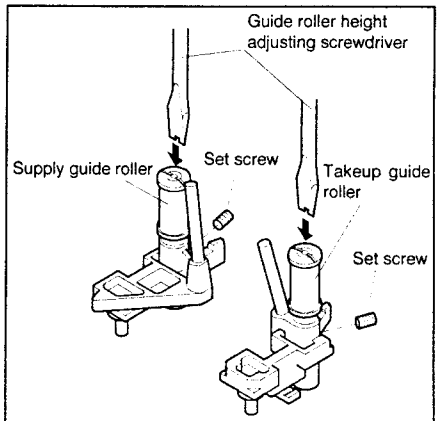



Fig. 3 - 2 - 2

## 3-2-4 Coarse Adjustment of Phase

① Play back the alignment tape.
[PM6KH3 : 859C339O30]
② Preset tracking. (Refer to NOTE 1 in Para. 3.)
③ Check the FM waveform after checking and adjusting the guide rollers.
④ If the amplitude of the FM waveform is narrow like F because of out of phase, adjust it to maximum like G, as shown in Fig. 3-2-4 by the following procedure. Loosen the screw E , insert a screw driver into the groove at the Base A/C and the main plate, and shift the Base A/C right and left.
⑤ Tighten the screw E to secure the base-A/C in place.

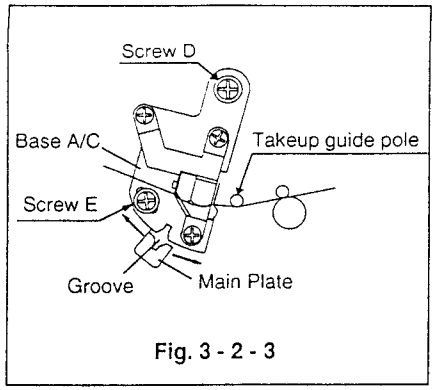



Fig. 3 - 2 - 3

## 3-2-5 Check of FM Waveform Flatness

① Play back the alignment tape.
[PM6KH3 : 859C339O30]

Note: In the following adjustment, follow the next procedure for automatic / manual-selection and adjustment of tracking.

- Turn the JOG dial while pressing the O.K.PROG. button on the VCR during playback.
- To switch from manual tracking back to automatic digital tracking, press the O.K.PROG. button on the VCR during playback.

② In the manual tracking mode, change tracking and make sure the amplitude is changeable while the FM signal remains flat.
③ Adjust tracking so that the amplitude of the FM waveform is maximum. Set the oscilloscope so the amplitude of the FM waveform is 5 division.
④ Adjust tracking so that the peak value of the FM waveform is 4 divisions. Check if the FM waveform B, C, D, and E are within the specified values shown in Fig. 3-2-5.
⑤ If the waveform is not within the specified value, repeat the procedure for checking and adjustment of FM envelope in Item 3-2 from the beginning.

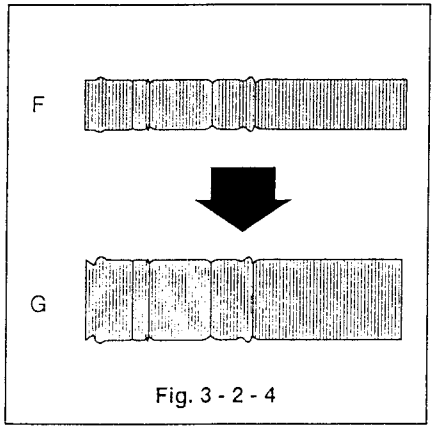
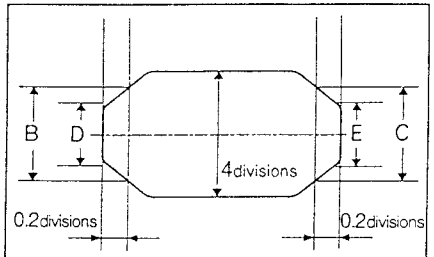



Fig. 3 - 2 - 4




| | |
|---|---|
| B , C | At least 2.8 of the scale |
| D , E | At least 2.0 of the scale |

Fig. 3 - 2 - 5



## 3-2-6 Check 1: Tape Running Condition at the Guide Rollers (Refer to Fig. 3-2-6)

① Play back the alignment tape.
[PM6KH3 : 859C339O30 ]
② Visually check if there is a space between the tape and the lower flange of the supply guide roller and takeup guide roller.
③ If there is no space, replace the tape guide as in Item 3-2-7.
④ If EITHER GUIDE ROLLER is replaced. Perform the GUIDE ROLLER adjustment in item 3-2-1. And the FM waveform flatness check in item 3-2-5.
⑤ Load and unload the tape several times, check that flatness of the FM waveform does not change.
⑥ If flatness changes, check if the A/C arm is loose. If it is not loose, replace the A/C arm and repeat the procedure for coarse adjustment of phase in Item 3-2-4.

## 3-2-7 Replacement of Tape Guides

① If the current tape guide has no marking, replace it with one with a red mark.
② If the current tape guide has a black mark, replace it with one with no mark. If this replacement is not effective, replace the tape guide with one with a red mark.
③ If the current tape guide has a red mark, replace it with another one with red mark.

## 3-2-8 Check 2: Tape Running Condition on Guide Rollers

① Play back the alignment tape.
[PM6KH3 : 859C339O30 ]
② Lightly press and release the top of the supply guide roller and takeup guide roller. Check that the FM waveform is quickly restored to the previous level.
③ If the waveform is not quickly restored, replace the tape guide as in Item 3-2-7.
④ If the supply tape guide is replaced, check the guide roller as in Item 3-2-1, and if the takeup tape guide is replaced, check the guide roller as in Item 3-2-1. Perform the check FM waveform flatness check as in Item 3-2-5.
⑤ If satisfactory, tighten the set screw of the guide roller on the supply side and the takeup side.

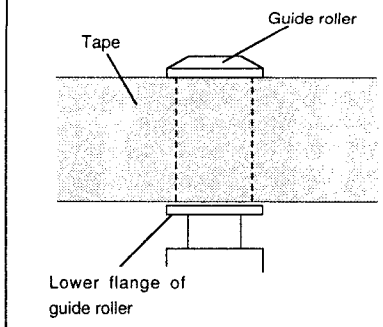



Fig. 3 - 2 - 6

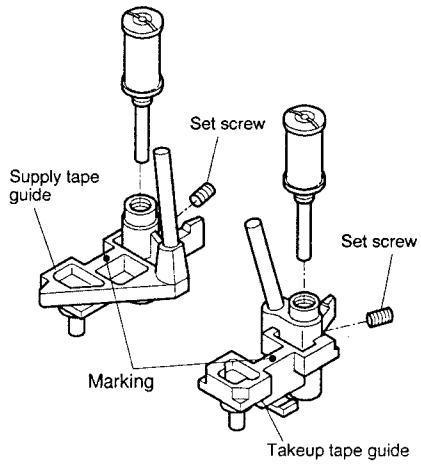



Fig. 3 - 2 - 7

Identification of Tape Guide Item Number
(Example; Parts No. 635B059O10
Item No.

| | |
|---|---|
| Item No. 1 | No marking |
| Item No. 2 | Marked with black magic marker |
| Item No. 3 | Marked with red magic marker |

*The marking point is on the top of the tape guides shown in figure above.

## 3-3 Adjustment of A/C Head

### 3-3-1 Adjustment of A/C Head Slant

① Playback a blank tape.
② Slowly turn the adjusting screw C counter-clockwise to crease the bottom of the tape slightly at the flange portion of the takeup tape guide.
③ Return adjusting screw C slowly to remove the crease.
④ Slowly turn adjusting screw C counter-clockwise again and stop turning just before the tape is creased.

### 3-3-2 Adjustment of A/C Head Azimuth and Height

① If the height of the CTL head is different from the specified-value in Fig. 3-3-2, adjust the height by the adjusting screw A.
② If adjusting screw A is moved, repeat the procedure in Item 3-3-1 to adjust the A/C head Slant.
③ Connect the oscilloscope to the audio output terminal and set the VCR to the playback mode.
④ Playback the standard tape. [PM6KH3 : 859C339O30]
⑤ Turn adjusting screw B to adjust azimuth so that the audio output level is maximum. Set the scope for an amplitude of 5 divisions.
⑥ After the adjustment of ⑤, pull out the screw driver and check if the audio output level is 4.6 divisions or more, when the maximum level (audio output) of ⑤ was set for 5 divisions.
⑦ If the audio output level is below the specified value, repeat the procedure ①~⑥.
⑧ Push the A/C head to the right and left(in the direction of A and A' in Fig. 3-3-1) and the release the A/C head. Check that the audio output level does not change. (Do not push past the point where the audio output level is reduced by 3/4 of its maximum value.)
⑨ Set the VCR to the playback mode and check if the change of the audio output level is less than 2dB.
⑩ If the change is over 2dB, adjust the A/C head slant again and recheck.
⑪ If not satisfactory, replace the takeup tape guide complying with the following procedure and repeat this adjustment.

- If the original tape guide has no marking, replace it with the one with a black mark.
- If the original tape guide has a black mark, replace it with one with a black mark.
- If the original tape guide has a red mark, replace it with the one with a red mark. If this replacement is not effective, replace it with one with a black mark.

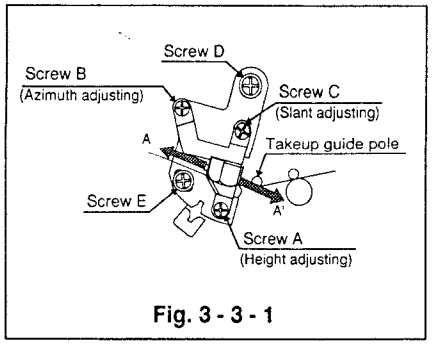



Fig. 3 - 3 - 1

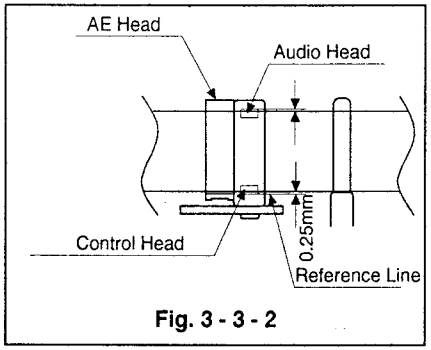



Fig. 3 - 3 - 2

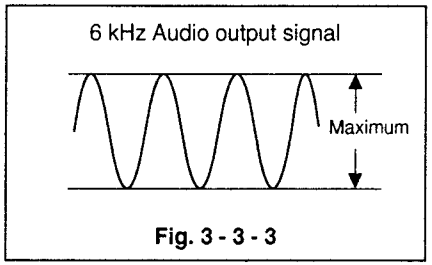



Fig. 3 - 3 - 3

Identification of Tape Guide Item Number
(Example; Parts No. 635B059O10)
Item No.

| | |
|---|---|
| Item No. 1 | No marking |
| Item No. 2 | Marked with black magic marker |
| Item No. 3 | Marked with red magic marker |

* The marking point is on the tops of the Takeup and Supply tape guides. (Refer to Fig. 3-2-7)



## 3-4 Adjustment of Phase

① Set the VCR to the playback mode.
(Use the alignment tape specified below to perform adjustment ①~④.)
[PM3KE6 (CH1) 25 : 859C568O50]
② Preset tracking. (Refer to NOTE 1 in Para. 3.)
③ Loosen the screw E, insert a screw driver into the gap between the Base A/C and the main plate, and shift the Base A/C right and left to adjust the FM waveform to maximum.
④ Tighten the screw E.
⑤ Play back the alignment tape. (PMX:859C568O70)
⑥ Connect TP2A ( the FM waveform output) and the audio output terminal to the oscilloscope, external Trig. to TP2H, and check if the missing portions of the FM waveform and that of the audio waveform are within the specified value (field).
(Refer to Fig. 3-4-2.)
⑦ If they are not within the specified value, repeat the procedure ③.
⑧ Turn the normal tracking control to adjust the FM waveform for maximum and set the oscilloscope so that the waveform is '5' divisions. (Refer to Note in Para. 3-2-5 about tracking adjustment.)
⑨ Preset tracking. (Refer to NOTE 1 in Para. 3.)
⑩ Check that the FM waveform on the oscilloscope is " 4.8 " or more divisions.
⑪ If the FM waveform is below " 4.8 " divisions, perform this adjustment after tracking preset.
⑫ Push the A/C head to the right and left (in the direction of A-A' in Fig. 3-4-1) and then release the A/C head. Check that the amplitude of the FM waveform does not change from that before shifting the A/C head.
⑬ If the amplitude changes, check if the A/C arm shaft is loose. If it is not loose, replace the A/C arm and repeat the procedure of this adjustment from the beginning, after the adjustment of A/C head in Item 3-3.
⑭ Alternately load and unload the tape several times to check that the amplitude of the FM waveform does not change.

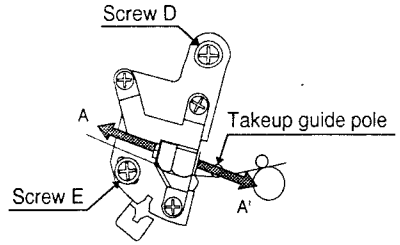



Fig. 3 - 4 - 1

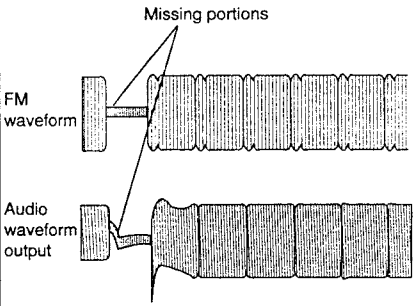



Fig. 3 - 4 - 2

## 3-5 Adjustment of Takeup Guide Arm Height

① Run a final portion of E-240 blank tape in the reverse search mode.

② Tighten the adjusting nut of takeup tape guide until the tape is creased at the lower flange of the takeup guide pole. Then slowly return the nut and stop at the point where the crease is removed. (During adjustment, use a uncovered cassette tape or raise the cover so that the adjustment can be performed.)

**Note:** During adjustment, turn the adjusting nut in the loosening direction. Do not turn the nut more than ±1/2 turn.

③ Eject the cassette tape, set the VCR to the reverse search mode again, and check that the tape is not creased at the upper or lower flange of the takeup tape guide.

④ Set the VCR to the playback mode and check that the tape is not creased at the upper or lower flange of the takeup guide pole.

⑤ Run the start portion of E-180 blank tape in the forward search mode and check that the tape is not creased at the takeup guide pole.

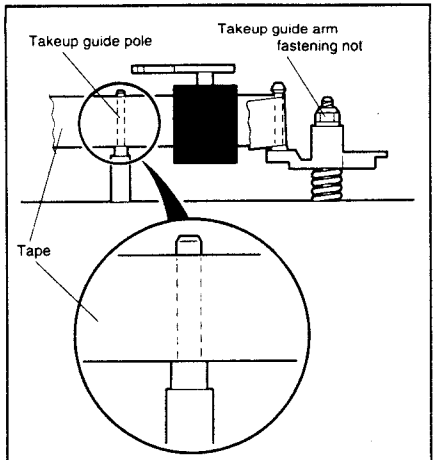



Fig. 3 - 5



## 4. Servicing for Tape Jamming during the Loading Mode

① Remove the upper cover.

② Remove the front unit.

③ Remove the bottom panel.

④ Reverse the deck and turn the pulley worm J in the direction shown by the arrow in Fig.4-1, observe whether the tape guides move to the unloading position. If they do not, follow the procedure (1). If they do, follow the procedure (2).

**(1) If the tape guides do not move (the pulley worm J does not turn);**

① Unfasten the clamp holding the leads of the loading motor, which are attached to the side plate of the cassette housing. Unscrew screws (ⓐ and ⓑ) holding the cassette housing as shown in Fig. 4-2.

② Hold the cassette door with a screw driver to keep it open. (Take care not to allow the screw driver to touch other parts of the tape transport.)

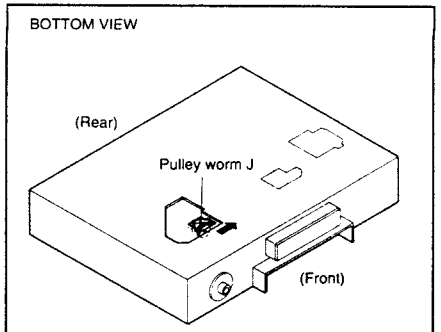



Fig. 4 - 1

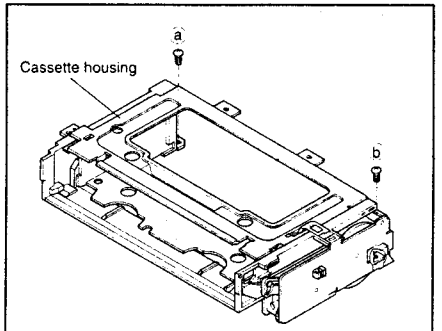



Fig. 4 - 2

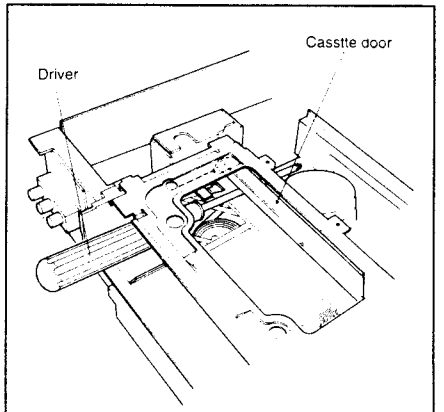



Fig. 4 - 3

③ Open the cassette door fully with your hand. Unfasten the catch to remove the pinch roller arm cap as shown in Fig. 4-4. (Refer to Para. 2-24 for the removal method.)

④ Push part A of the pinch roller arm assembly, shown in Fig. 4-5, in the direction shown by the arrow to make a space between the pinch roller arm assembly and the tape. Remove it together with the pinch cam taking care not to damage the tape.

⑤ Remove the screw driver (refer to Item ②), while holding the cassette door open with your hand. While pushing the tension arm in the direction shown by the arrow in Fig. 4-6 raise the cassette housing upward to remove it from the tape transport as shown in Fig. 4-7. Take care that the grease, which is applied to the main plate, does not adhere to the tape.

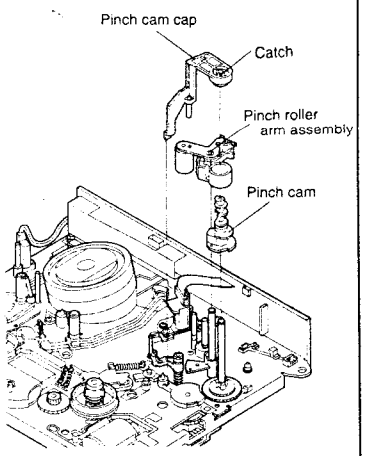



Fig. 4 - 4

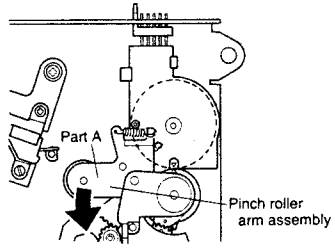



Fig. 4 - 5

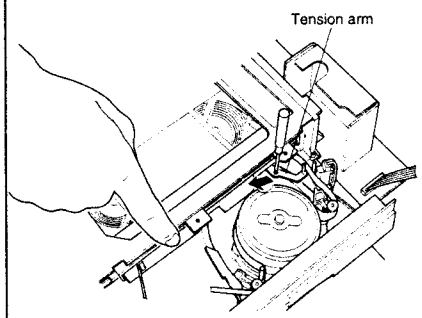



Fig. 4 - 6



⑥ Turn the cassette reel of the cassette tape to wind up the tape as shown in Fig. 4-8.

⑦ Turn the wheel gear shown in Fig. 4-9 in the direction shown by the arrow to eject the cassette tape.

⑧ Reverse the deck and turn the motor pulley J in the direction, shown by the arrow in Fig. 4-1, so that the matching mark M of the mode switch is in the position shown in Fig. 4-10 (the eject position). Make sure that the matching marks of the mode switch and the gear pinch, and those of the gear pinch and the joint gear, respectively, align as shown in Fig. 4-11. Turn the takeup guide arm clockwise to such a degree that takeup guide gear is not in the way of mounting the pinch roller cam to the shaft. Install the pinch roller cam so that its holes align with the triple catch of the gear pinch. (Refer to Para. 2-24 for the installation method.)

⑨ Install the pinch roller arm and the pinch roller arm cap.

⑩ Install the cassette housing. (Refer to Para. 2-1 for the installation method.)

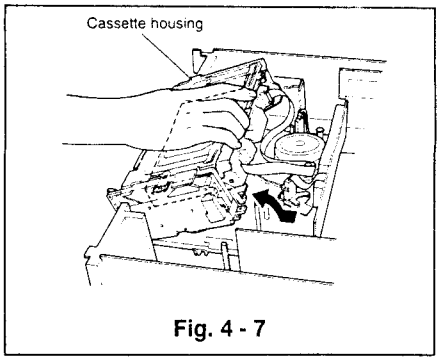



Fig. 4 - 7

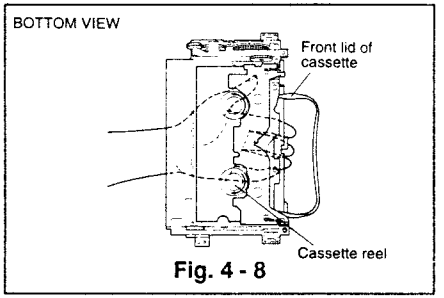



Fig. 4 - 8

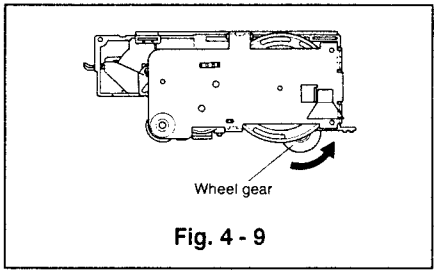



Fig. 4 - 9

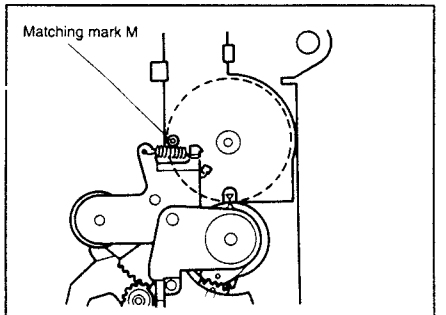



Fig. 4 - 10

**(2) If the tape guides move (the pulley worm J turns);**

① Reverse the deck and turn the pulley worm J in the direction shown by the arrow in Fig. 4-1 so that the takeup guide arm moves to the end of the unloading cycle.

② Turn the capstan shaft, shown in Fig. 4-12, clockwise to turn the reel so that the tape is wound back into the cassette. (Take care not to scar or stain the capstan shaft. After winding up the tape, clean the capstan shaft with alcohol, refer to Para. 1-2.)

③ Turn the pulley worm J as in Item ① so that the matching mark of the mode switch is in the position shown in Fig. 4-10 (the eject position). Eject the cassette tape.

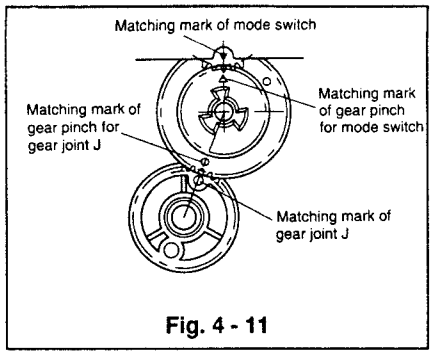

Matching mark of mode switch
Matching mark of gear pinch for gear joint J
Matching mark of gear pinch for mode switch
Matching mark of gear joint J

**Fig. 4 - 11**

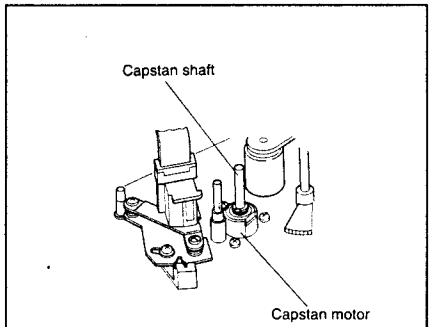



**Fig. 4 - 12**



# SPECIFICATION OF VPS RECORDING SYSTEM

**[HS-541V(G) only]**

## 1. VPS Signal

The VPS signal makes it possible during timer recording of television programs to switch on and off the unit at the correct time by using the preprogrammed recording time. The VPS signal is transmitted in the 16th line of the vertical blanking signal. Refer to Fig. 1. The VPS data signal is shown in Fig. 2. The television stations are responsible for changing of the VPS data. These are included in words 11 to 14.

The normal VPS code includes time data and program data. It is transmitted with the program and recognized by the unit as program identification. A program, which was scheduled for the time from 0:99 to 4:00 and the start of which was changed to the previous day, keeps its original label. If the program is extended, the label is valid until 4:00 of the following day, if the correct sending code is received. The maximum starting time for a delayed program is 4:00 of the following day.

## 2. Expected VPS time and type of VPS recording

2-1 At 20:00 on the day before the starting time the recorder is switched on and enters the expected VPS time. During the expected VPS time the unit is switched to the corresponding channel and waits for the VPS signal.

2-2 If a VPS signal, which confirms to the preprogrammed signal, is received, the unit switches into the recording mode.

2-3 If no VPS signal or status code is transmitted, the original recording time is used.

2-4 If an interruption code is transmitted during the VPS recording, the recording is stopped and the unit switches into the VPS stand-by mode. The recording is started, as soon as the regular VPS code is received again.

2-5 If the normal VPS code changes after the programmed timer recording into an unnormal code, the recording is finished.

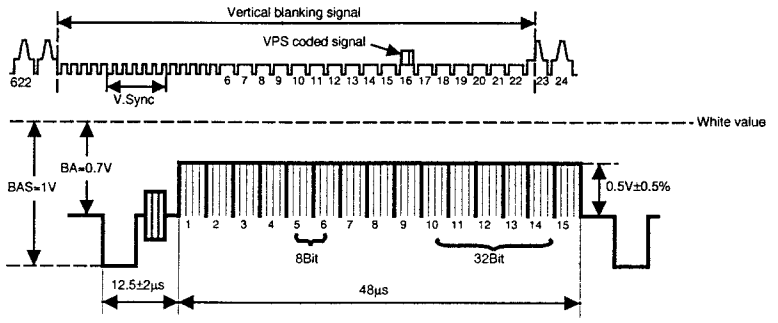
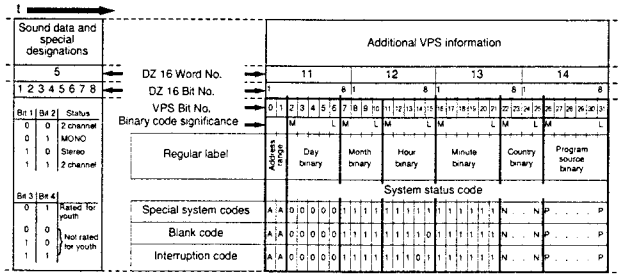



**Fig. 1 Inserting the data line into the FBAS signal**




The 2-channel-status is coded 11 at the studio side; 00 has to be considered at the receiving side in special cases only.

M = MSB
L = LSB

A = Actual address range code
N = Actual country code
P = Actual program source code

**Fig. 2 Data format of additional information in data line 16**

# GLOSSARY OF ABBREVIATIONS

| | |
|---|---|
| A/C | : Audio/Control |
| ACC | : Automatic Colour Control |
| A.E | : Audio Erase |
| AFC | : Automatic Frequency Control |
| AFT-D | : Automatic Fine Tuning Door Switch |
| AGC | : Automatic Gain Control |
| AL | : After Load |
| AMP | : Amplifier |
| ANT | : Antenna |
| A-PB | : Audio-Playback |
| A-REC | : Audio-Recording |
| ALC | : Automatic Level Control |
| B-FS | : Brake Forward Search |
| B-RS | : Brake Reverse Search |
| BPF | : Band-Pass Filter |
| B/W | : Black and White |
| BS | : Band SW |
| CASS | : Cassette |
| CP | : Capstan |
| CP-FG | : Capstan-Frequency Generator |
| CP-F/R | : Capstan-Forward/Reverse |
| CP-M | : Capstan-Motor |
| CONV | : Converter |
| CTL | : Control |
| C-LAMP | : Cassette Lamp |
| C-ILAMP | : Cassette Indicator Lamp |
| CE | : Chip Enable |
| $\overline{CE}$ | : Not Chip Enable |
| CK | : Clock |
| CL | : Clear |
| CNT | : Counter |
| CP R-R | : Capstan Reverse Rotation |
| CS-1 | : Cassette Switch 1 |
| CS-2 | : Cassette Switch 2 |
| DAL | : Delay-After Loading |
| DEMOD | : Demodulator |
| DET | : Detector |
| DL | : Delay Line |
| DL-REV | : During Reverse |
| DL-FWD | : During Forward |
| DOC | : Drop Out Compensator |
| DL-SL | : During Slow |
| DL-$\overline{SS}$ | : During Not Speed Search |
| DOP | : Drop Out Pulse |
| EF | : Emitter Follower |
| EMPHA | : Emphasis |
| EQ | : Equalizer |
| EE | : Electronic-Electronic |
| ES | : End Sensor |
| FE-H | : Full Erase Head |
| FF | : Fast Forward |
| FG | : Frequency Generator |
| FL-SW | : Front Loading SW |
| FLM | : Front Loading Motor |
| F/R-SW | : FF/Rewind Switch |
| F/R | : Forward/Reverse |
| FS | : Forward Search |
| G | : Ground |
| HE | : Hall Element |
| H-LED | : Humidity-LED |
| H-SENS | : Humidity-Sensor |
| HPF | : High-Pass Filter |
| LIM | : Limiter |
| LPF | : Low-Pass Filter |
| LM | : Loading Motor |
| MDA | : Motor Drive Amplifier |
| MC | : Mechanical Control |
| MIC | : Microphone |
| MOD | : Modulator |
| $\overline{N}$ | : Not Normal |
| OPE | : Operation |
| OSC | : Oscillator |
| O-PWV | : ON/OFF Command from Remote Decorder |
| PB | : Play Back |
| PG | : Pulse Generator |
| P/R-SW | : P.B/REC-SW |
| PCB | : Printed Circuit Board |
| PIC | : Picture Control |
| P/R | : Play/Record |
| PSC | : Pulse swallow control |
| PWT-SET | : Power TV Set |
| PWV | : ON/OFF Command to B + Switching Circuit |
| REC | : Recording |
| REF | : Reference |
| RIS | : Record Inhibit Switch |
| REW | : Rewind |
| REG | : Regulator |
| RS | : Reverse Search |
| REC-2 | : Record Command for the Fine Editing Circuit |
| R-FS | : Reel Drive Forward Search |
| R-P/R | : Reel Drive Play/Record |
| S/AL | : Stop After Load |
| SL | : Slow |
| SLOCK | : Slow OK |
| S/P | : Still/Pause |
| SS | : Start Sensor |
| SRV-REC | : Servo Record |
| $\overline{SS}$ | : Not Speed Search |
| S-STOP | : Stop Command |
| STOK | : Still OK |
| STW | : Stop Watch |
| SENS | : Sensor |
| STBY | : Stand By |
| TM | : Take up Motor |
| T-REC | : Timer-Record |
| T.P | : Test Point |
| TR | : Transistor |
| TU-P | : Tuner-Power |
| UL | : Unload |
| VS | : Voltage Synthesizer |
| V.SYNC | : Vertical Sync |
| VCO | : Voltage Controlled Oscillator |
| VXO | : Variable Crystal Oscillator |
| W/D | : White/Dark |
| X'OSC | : Crystal Oscillator |
| Y/C | : Luminance/Chrominance |



# CHIP PARTS REPLACEMENT

## CHIP PARTS REPLACEMENT

Some resistors, shorting jumpers (0Ω resistor), ceramic capacitors, transistors and diodes are chip parts which are used for certain circuit elements. When replacing these parts, note the following cautions.

**Cautions:**

A. Use fine tipped, well insulated soldering pencil (iron), about 30 watts, and tweezers.
B. Melt the solder and remove the Chip Parts carefully not to tear off the copper foil of the printed circuit board.
C. Discard removed chips; do not reuse them.
D. Do not apply heat for more than 3 seconds to new chip Parts.
E. Avoid using a rubbing stroke when soldering.
F. Take care not to scratch, or damage the Chip Parts when soldering.
G. Supplementary cementing is not required.

### 1 Removal of Chip Parts (Resistors, capacitors, etc.)

A. Grasp the part with tweezers. Melt the solder at both sides alternately, remove one side of the part with a twisting motion.
B. Melt the solder at the other side and remove the part.

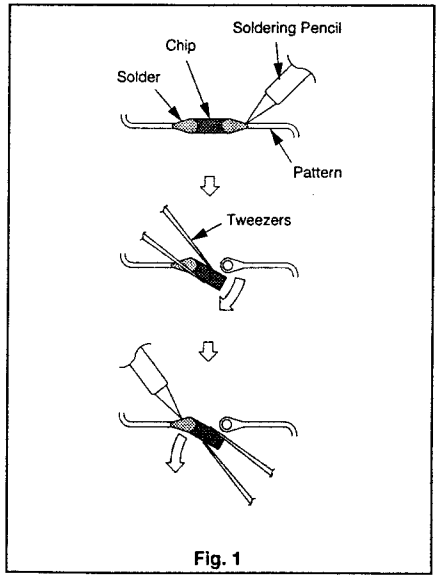



Fig. 1

### 2 Removal of Chip Parts (Transistors)

A. Melt the solder of one lead. Lift the side of that lead upward.
B. Simultaneously melt the solder of the two remaining leads and lift the part.

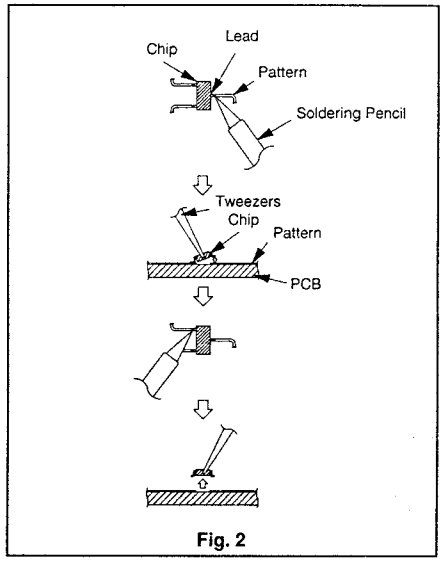



Fig. 2

### 3 Replacement

A. Presolder the contact points of the circuit pattern.
B. Press the part downward with tweezers and apply the soldering pencil as shown in Fig. 3.

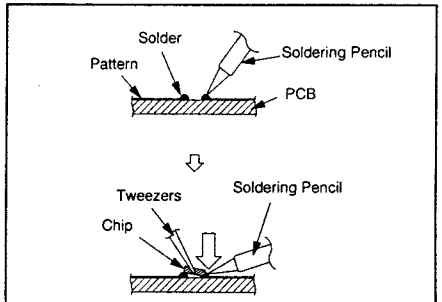
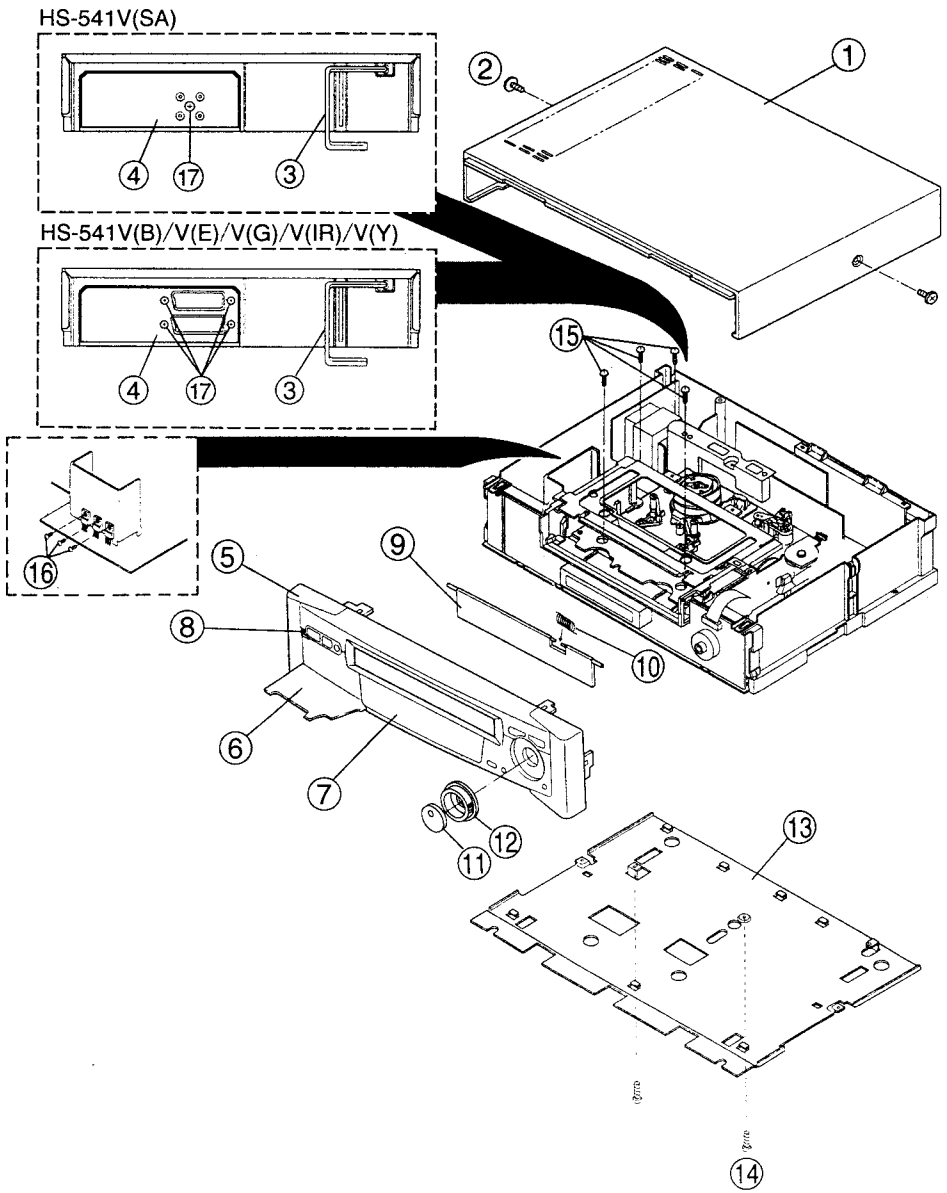



Fig. 3

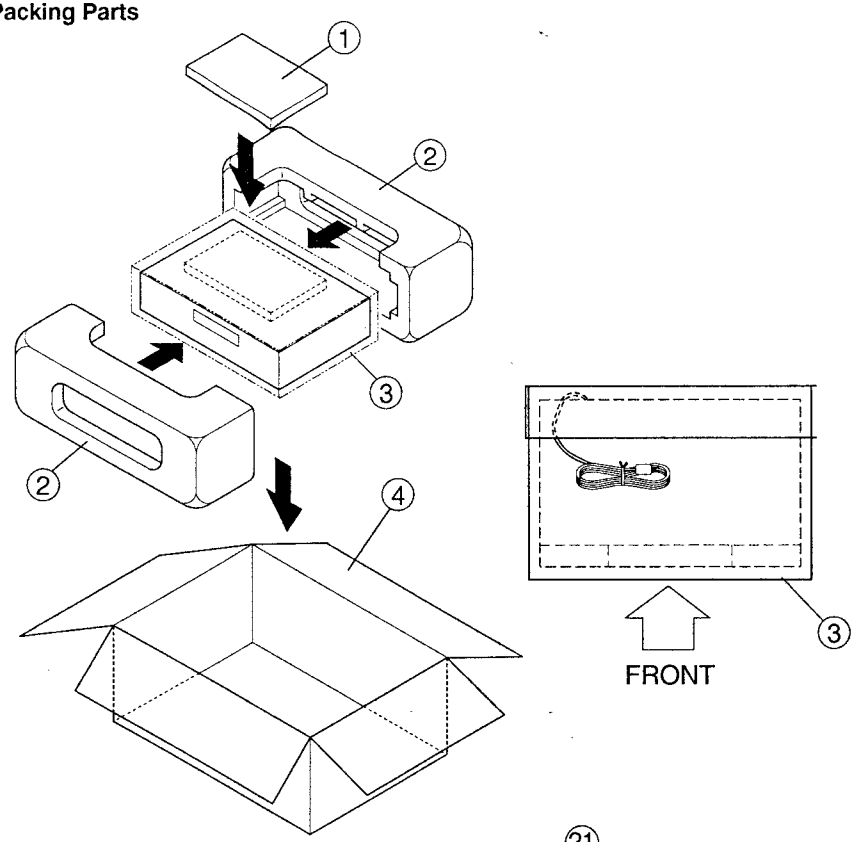
# PARTS LIST

1. CABINET ASSEMBLY

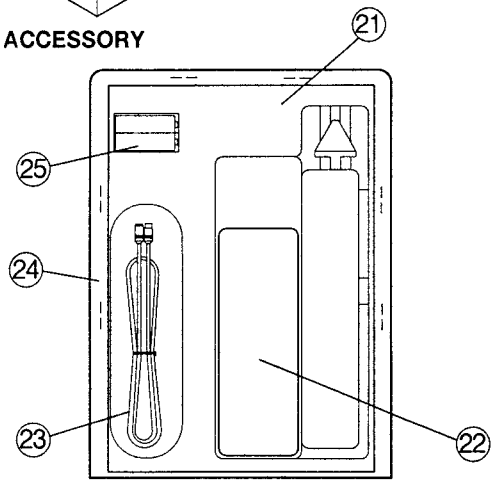



| ITEM NO. | PARTS NO. | PARTS NAME | DESCRIPTION |
|---|---|---|---|
| | | CABINET ASSEMBLY | |
| 1 | 968C040001 | TOP COVER ASSY | |
| 2 | 669D223080 | SCREW | 3X10 BLK |
| 3 | 246C149080 | AC POWER CORD | [E, G, Y] |
| 3 | 246C167010 | AC POWER CORD | [B, IR] |
| 3 | 246C149070 | AC POWER CORD | [SA] |
| 4 | 761B284020 | COVER ANTENNA | [B] |
| 4 | 761B284010 | COVER ANTENNA | [E, IR] |
| 4 | 761B284050 | COVER ANTENNA | [G] |
| 4 | 761B284070 | COVER ANTENNA | [SA] |
| 4 | 761B284040 | COVER ANTENNA | [Y] |
| 5 | 968B035001 | FRONT PANEL ASSY | [B] |
| 5 | 968B035003 | FRONT PANEL ASSY | [E] |
| 5 | 968B035005 | FRONT PANEL ASSY | [G] |
| 5 | 968B035004 | FRONT PANEL ASSY | [IR] |
| 5 | 968B035008 | FRONT PANEL ASSY | [SA] |
| 5 | 968B035002 | FRONT PANEL ASSY | [Y] |
| 6 | 752C161080 | DOOR PANEL ASSY | [B, IR] |
| 6 | 752C163040 | DOOR PANEL ASSY | [E] |
| 6 | 752C161090 | DOOR PANEL ASSY | [G] |
| 6 | 752C163020 | DOOR PANEL ASSY | [SA] |
| 6 | 752C163010 | DOOR PANEL ASSY | [Y] |
| 7 | 752C156010 | PANEL TIMER | [E, SA, Y] |
| 7 | 752C156020 | PANEL TIMER | [G, IR] |
| 8 | 761C553010 | PUSH DOOR | |
| 9 | 752C162060 | CASSETTE DOOR ASSY | [B] |
| 9 | 752C160070 | CASSETTE DOOR ASSY | [E, Y] |
| 9 | 752C160080 | CASSETTE DOOR ASSY | [G] |
| 9 | 752C160090 | CASSETTE DOOR ASSY | [IR] |
| 9 | 752C162070 | CASSETTE DOOR ASSY | [SA] |
| 10 | 572D385010 | SPRING F/L | |
| 11 | 968D006004 | JOG DIAL ASSY | [B, G, IR, SA, Y] |
| 12 | 704C947010 | SHUTTLE RING | |
| 13 | 590A407010 | PANEL BOTTOM | |
| 14 | 669D220030 | SCREW | 3X10 46LA005 |
| 15 | 669D221040 | SCREW | 4X12 46LA005 |
| 16 | 669D222090 | SCREW | 3X10 46LA005 |
| 17 | 669D359040 | SCREW | 4X12 46LA005 |

## 2. Packing Parts




**ACCESSORY**






| ITEM NO. | PARTS NO. | PARTS NAME | DESCRIPTION |
|---|---|---|---|
| | | PACKING PARTS | |
| 1 | ---------- | ACCESSORY | |
| 2 | 803A403010 | PACKING CUSHION | |
| 3 | ---------- | POLYETHYLENE SHEET | |
| 4 | 802B493030 | PACKING CASE | [B] |
| 4 | 802B493060 | PACKING CASE | [E] |
| 4 | 802B493040 | PACKING CASE | [G] |
| 4 | 802B493070 | PACKING CASE | [IR] |
| 4 | 802B493090 | PACKING CASE | [SA] |
| 4 | 802B493050 | PACKING CASE | [Y] |
| | | ACCESSORY | |
| 21 | 872C133090 | INSTRUCTION BOOK | [B] |
| 21 | 872C133070 | INSTRUCTION BOOK | [E] |
| 21 | 872C133080 | INSTRUCTION BOOK | [G] |
| 21 | 872C134000 | INSTRUCTION BOOK | [IR] |
| 21 | 872C134020 | INSTRUCTION BOOK | [SA] |
| 21 | 872C133060 | INSTRUCTION BOOK | [Y] |
| 22 | 939P592010 | REMOTE HAND UNIT | [B, IR] |
| 22 | 939P592020 | REMOTE HAND UNIT | [E, Y] |
| 22 | 939P592030 | REMOTE HAND UNIT | [G] |
| 22 | 939P593020 | REMOTE HAND UNIT | [SA] |
| 23 | 242D231030 | CABLE | [B, E, IR, SA, Y] |
| 23 | 243C120010 | CABLE | [G] |
| 24 | 829B013030 | PACKING PACK | ACCESSORY [B, IR, SA, Y] |
| 24 | 829B013040 | PACKING PACK | ACCESSORY [E] |
| 24 | 829B013070 | ACCESSORY PACK | [G] |
| 25 | ---------- | BATTERY | |

# 3. ELECTRICAL PARTS

| SYMBOL NO. | PARTS NO. | PARTS NAME | DESCRIPTION |
|---|---|---|---|
| **INTEGRATED CIRCUITS** | | | |
| IC101 | 270P184010 | IC | M52318SP |
| IC102 | 266P192010 | IC | LA7910 [E, G, IR, SA, Y] |
| IC103 | 272P654010 | IC | M51497L [E, G, Y] |
| IC201 | 270P183010 | IC | BA7184S |
| ○ IC2A0 | 270P246010 | IC | LA7449M |
| ○ IC2A1 | 270P247010 | IC | LC89970M |
| IC2A3 | 270P067010 | IC | BA7645N [B, E, IR, SA] |
| IC2301 | 270P167020 | IC | LA7156-S [G, Y] |
| IC2302 | 272P265010 | IC | BA7021 [G, Y] |
| IC2303 | 272P400010 | IC | NJM2233BL [G, Y] |
| IC310 | 272P234010 | IC | LA7295 |
| IC3B0 | 270P046010 | IC | BA7644AN [B, E, IR, SA] |
| IC4A0 | 274P318070 | IC | MN67492MSX5 |
| IC4A1 | 272P237010 | IC | LA6324N |
| IC501 | 274P573010 | IC | M35013-050SP |
| IC551 | 274P672010 | IC | SDA5649 [B, E, G, IR] |
| ○ IC571 | 274P677010 | IC | M37470M4-526SP [B] |
| IC5A0 | 274P674030 | IC | M38185ME-094FP [B, IR] |
| IC5A0 | 274P674040 | IC | M38185ME-116FP [E, SA, Y] |
| IC5A0 | 274P674020 | IC | M38185ME-093FP [G] |
| IC5A1 | 263P593010 | IC | CAT35C104P |
| IC5A2 | 272P235010 | IC | TA7291S |
| IC5A4 | 266P010020 | IC | μPC574J-K |
| IC5A5 | 270P070010 | IC | AT93C56-10PC [B, IR] |
| IC5A5 | 263P593010 | IC | CAT35C104P [G] |
| IC9A0 | 272P237010 | IC | LA6324N |
| **TRANSISTORS** | | | |
| Q 101 | 260P874010 | CHIP TRANSISTOR | 2SC3082K-P, Q |
| Q 102 | 260P560040 | TRANSISTOR | 2SA933S-S |
| Q 103 | 260P805030 | CHIP TRANSISTOR | 2SC3053-D |
| Q 106 | 260P808010 | CHIP TRANSISTOR | DTC114EK [E, G, SA, Y] |
| Q 109 | 260P804020 | CHIP TRANSISTOR | 2SC3052-F [E, G, Y] |
| Q 110 | 260P804020 | CHIP TRANSISTOR | 2SC3052-F [E, G, Y] |
| Q 111 | 260P808010 | CHIP TRANSISTOR | DTC114EK [E, G, Y] |
| Q 201 | 260P807010 | CHIP TRANSISTOR | UN2212 |
| Q 202 | 260P807010 | CHIP TRANSISTOR | UN2212 |
| Q 205 | 260P807010 | CHIP TRANSISTOR | UN2212 |
| Q 207 | 260P802020 | CHIP TRANSISTOR | 2SA1235-F |
| Q 208 | 260P805030 | CHIP TRANSISTOR | 2SC3053-D |
| Q 260 | 260P807010 | CHIP TRANSISTOR | UN2212 |
| Q 261 | 260P807010 | CHIP TRANSISTOR | UN2212 |
| Q 262 | 260P807010 | CHIP TRANSISTOR | UN2212 |
| Q 2A0 | 260P805030 | CHIP TRANSISTOR | 2SC3053-D |
| Q 2A1 | 260P807010 | CHIP TRANSISTOR | UN2212 |
| Q 2A2 | 260P805030 | CHIP TRANSISTOR | 2SC3053-D |
| Q 2A3 | 260P805030 | CHIP TRANSISTOR | 2SC3053-D |
| Q 2A4 | 260P805030 | CHIP TRANSISTOR | 2SC3053-D |
| Q 2A5 | 260P805030 | CHIP TRANSISTOR | 2SC3053-D |
| Q 2A8 | 260P560040 | TRANSISTOR | 2SA933S-S |
| Q 2A9 | 260P807010 | CHIP TRANSISTOR | UN2212 |
| Q 2G0 | 260P806010 | CHIP TRANSISTOR | DTA124EK [E, G, IR, SA, Y] |
| Q 2G1 | 260P805030 | CHIP TRANSISTOR | 2SC3053-D |
| Q 2G2 | 260P805030 | CHIP TRANSISTOR | 2SC3053-D |
| Q 2G3 | 260P807010 | CHIP TRANSISTOR | UN2212 |
| Q 2G5 | 260P807010 | CHIP TRANSISTOR | UN2212 [B] |
| Q 2G7 | 260P802020 | CHIP TRANSISTOR | 2SA1235-F |
| Q 2H0 | 260P802020 | CHIP TRANSISTOR | 2SA1235-F |
| Q 2H1 | 260P806010 | CHIP TRANSISTOR | DTA124EK [E, G, IR, SA, Y] |
| Q 2H3 | 260P807010 | CHIP TRANSISTOR | UN2212 |
| Q 2R0 | 260P805030 | CHIP TRANSISTOR | 2SC3053-D [B, E, IR] |
| Q 2R1 | 260P805030 | CHIP TRANSISTOR | 2SC3053-D [B, E, IR] |
| Q 2R2 | 260P807010 | CHIP TRANSISTOR | UN2212 [G, Y] |
| Q 2V0 | 260P802020 | CHIP TRANSISTOR | 2SA1235-F [B, E, G, IR] |
| Q 2V1 | 260P802020 | CHIP TRANSISTOR | 2SA1235-F [B, E, IR, SA] |
| Q 2301 | 260C676040 | TRANSISTOR | 2SC3311A-R, S [G, Y] |
| Q 2304 | 260P603010 | TRANSISTOR | UN4112 [G, Y] |
| Q 2305 | 260P560040 | TRANSISTOR | 2SA933S-S [G, Y] |
| Q 310 | 260P629060 | TRANSISTOR | 2SC3331-S |
| Q 3A0 | 260P804020 | CHIP TRANSISTOR | 2SC3052-F |
| Q 3A1 | 260P804020 | CHIP TRANSISTOR | 2SC3052-F |
| Q 4A0 | 260P804020 | CHIP TRANSISTOR | 2SC3052-F |
| Q 4A2 | 260P804020 | CHIP TRANSISTOR | 2SC3052-F |
| Q 4A3 | 260P804030 | CHIP TRANSISTOR | 2SC3052-G |
| Q 4A4 | 260P802020 | CHIP TRANSISTOR | 2SA1235-F |
| Q 4A7 | 260P802020 | CHIP TRANSISTOR | 2SA1235-F |
| Q 4A8 | 260P802020 | CHIP TRANSISTOR | 2SA1235-F |
| Q 4C8 | 260P805030 | CHIP TRANSISTOR | 2SC3053-D [B, E, G, IR, Y] |
| Q 501 | 260P802020 | CHIP TRANSISTOR | 2SA1235-F |
| Q 503 | 260P802020 | CHIP TRANSISTOR | 2SA1235-F |
| Q 506 | 260P802020 | CHIP TRANSISTOR | 2SA1235-F [E, G, Y] |
| Q 508 | 260P804020 | CHIP TRANSISTOR | 2SC3052-F |
| Q 571 | 260P562040 | TRANSISTOR | 2SA952-K [B] |
| Q 5B1 | 260P562040 | TRANSISTOR | 2SA952-K [B] |
| Q 5A1 | 260P802020 | CHIP TRANSISTOR | 2SA1235-F |
| Q 5A2 | 260P802020 | CHIP TRANSISTOR | 2SA1235-F |
| Q 5A3 | 260P804020 | CHIP TRANSISTOR | 2SC3052-F |
| Q 5A9 | 260P806010 | CHIP TRANSISTOR | DTA124EK [E, G, IR, SA, Y] |
| Q 5B0 | 260P806010 | CHIP TRANSISTOR | DTA124EK [E, G, IR, SA, Y] |
| Q 5B1 | 260P807010 | CHIP TRANSISTOR | UN2212 |
| Q 5B2 | 260P802020 | CHIP TRANSISTOR | 2SA1235-F |
| Q 5B3 | 260P802020 | CHIP TRANSISTOR | 2SA1235-F |
| Q 5B5 | 260P804030 | CHIP TRANSISTOR | 2SC3052-G |
| Q 5B6 | 260P804030 | CHIP TRANSISTOR | 2SC3052-G |
| Q 5B7 | 260P807010 | CHIP TRANSISTOR | UN2212 |
| Q 5B8 | 260P806010 | CHIP TRANSISTOR | DTA124EK [E, G, IR, SA, Y] |
| Q 5B9 | 260P807010 | CHIP TRANSISTOR | UN2212 |
| Q 5C0 | 260P804030 | CHIP TRANSISTOR | 2SC3052-G |
| Q 5C1 | 260P804020 | CHIP TRANSISTOR | 2SC3052-F |
| Q 5C2 | 260P807010 | CHIP TRANSISTOR | UN2212 |
| Q 5C3 | 260P804020 | CHIP TRANSISTOR | 2SC3052-F |
| Q 5C4 | 260P804020 | CHIP TRANSISTOR | 2SC3052-F |
| Q 5C5 | 260P802020 | CHIP TRANSISTOR | 2SA1235-F |
| Q 5D6 | 260P806010 | CHIP TRANSISTOR | DTA124EK [E, G, IR, SA, Y] |
| Q 5E1 | 268P014030 | PHOTO TRANSISTOR | PN205L-(NC). MI2 |
| Q 5E2 | 268P014030 | PHOTO TRANSISTOR | PN205L-(NC). MI2 |
| Q 5E3 | 268P059010 | PHOTO INTERRUPTER | RPI-244 |
| Q 5E4 | 268P059010 | PHOTO INTERRUPTER | RPI-244 |
| Q 5F0 | 260P560040 | TRANSISTOR | 2SA933S-S |
| Q 5F1 | 260P806010 | CHIP TRANSISTOR | DTA124EK [E, G, IR, SA, Y] |
| Q 9A1 | 260C628010 | TRANSISTOR | 2SA1619A-Q |
| Q 9A2 | 260P640040 | TRANSISTOR | 2SD1762-E, F |
| Q 9A3 | 260P640040 | TRANSISTOR | 2SD1762-E, F |
| Q 9A4 | 260P640040 | TRANSISTOR | 2SD1762-E, F |
| Q 9A5 | 260P613010 | TRANSISTOR | 2SC4208A |
| Q 9A7 | 260P560030 | TRANSISTOR | 2SA933S-R, F |
| Q 9A8 | 260P560040 | TRANSISTOR | 2SA933S-S |
| Q 9A9 | 260P585030 | TRANSISTOR | 2SD1682-T, U |
| Q 9B0 | 260P802020 | CHIP TRANSISTOR | 2SA1235-F |
| Q 9B2 | 260P613010 | TRANSISTOR | 2SC4208A [G, Y] |
| **DIODES** | | | |
| D 5B1 | 264P585010 | LIGHT EMITTING DIODE | LN59L. MI |
| ○ D 8P0 | 264P634010 | LIGHT EMITTING DIODE | SLR-932A-7 [B] |
| **FILTERS** | | | |
| CF101 | 296P014030 | CERAMIC FILTER | SFE-6.0MHz [B, IR, SA] |
| CF101 | 296P014090 | CERAMIC FILTER | SFE-5.5MC2 [E, G, Y] |
| CF102 | 296P024040 | CERAMIC TRAP | TPS6.0MB [B, IR] |
| CF102 | 296P104010 | CERAMIC TRAP | EFC-S3F01W3A [E, G, Y] |
| CF102 | 296P093010 | CERAMIC TRAP | [SA] |
| CF103 | 299P051050 | CERAMIC RESONATOR | CSB500F9 [E, G, Y] |
| CF104 | 296P143020 | CERAMIC DISCRIMINATOR | CDSH6.0ME65 [B, IR, SA] |
| CF104 | 296P143010 | CERAMIC DISCRIMINATOR | CDSH5.5ME65 [E, G, Y] |
| SF101 | 296P141020 | SAW FILTER | SAF39.5MVA80Z [B] |
| SF101 | 296P141010 | SAW FILTER | SAF38.9MVB85Z [E, G, IR, SA, Y] |
| SF102 | 296P134020 | SAW FILTER | SAF32.9MC70Z [B, IR] |
| SF102 | 296P134010 | SAW FILTER | SAF33.0MC70Z [E, G, Y] |
| SF102 | 296P134040 | SAW FILTER | SAF32.9MCA70Z [SA] |
| **DELAY LINES** | | | |
| D 101 | 264P568010 | DIODE | 1SS252 [E, G, Y] |
| D 102 | 264P568010 | DIODE | 1SS252 [E, G, Y] |
| D 103 | 264P568010 | DIODE | 1SS252 [SA] |
| D 105 | 264P808010 | CHIP DIODE | DAN202K [SA] |
| D 2A0 | 264P568010 | DIODE | 1SS252 [E, G, IR, SA, Y] |
| D 2A2 | 264P568010 | DIODE | 1SS252 [E, G, IR, SA, Y] |
| D 2A3 | 264P568010 | DIODE | 1SS252 [E, IR] |
| D 2A4 | 264P568010 | DIODE | 1SS252 [E, G, IR, SA, Y] |
| D 2A6 | 264P807010 | DIODE | DAP202K HVN21C [G, Y] |
| D 2A7 | 264P568010 | DIODE | 1SS252 [E, IR, SA] |
| D 2A9 | 264P568010 | DIODE | 1SS252 [E, IR, SA] |
| D 2G2 | 264P568010 | DIODE | 1SS252 [E, G, IR, SA, Y] |
| D 2G5 | 264P568010 | DIODE | 1SS252 [E, G, IR, SA, Y] |
| D 2G6 | 264P568010 | DIODE | 1SS252 [E, G, IR, SA, Y] |
| D 2G7 | 264P568010 | DIODE | 1SS252 [E, G, IR, SA, Y] |
| D 2G8 | 264P568010 | DIODE | 1SS252 [E, G, IR, SA, Y] |
| D 2301 | 264P568010 | DIODE | 1SS252 [G, Y] |
| D 2302 | 264P568010 | DIODE | 1SS252 [G, Y] |
| D 2303 | 264P568010 | DIODE | 1SS252 [G, Y] |
| D 2304 | 264P568010 | DIODE | 1SS252 [G, Y] |
| D 2305 | 264P568010 | DIODE | 1SS252 [G, Y] |
| D 2306 | 264P568010 | DIODE | 1SS252 [E, G, IR, Y] |
| D 2307 | 264P568010 | DIODE | 1SS252 [G, Y] |
| D 2308 | 264P568010 | DIODE | 1SS252 [G, Y] |
| D 2309 | 264P568010 | DIODE | 1SS252 [G, Y] |
| D 2310 | 264P568010 | DIODE | 1SS252 [G, Y] |
| D 2311 | 264P568010 | DIODE | 1SS252 [G, Y] |
| D 2312 | 264P568010 | DIODE | 1SS252 [G, Y] |
| D 2313 | 264P568010 | DIODE | 1SS252 [G, Y] |
| D 2315 | 264P568010 | DIODE | 1SS252 [G, Y] |
| D 301 | 264P568010 | DIODE | 1SS252 [E, G, IR, SA, Y] |
| D 3A0 | 264P568010 | DIODE | 1SS252 [E, G, IR, SA, Y] |
| D 4A0 | 264P808010 | CHIP DIODE | DAN202K |
| D 4A1 | 264P568010 | DIODE | 1SS252 [E, G, IR, SA, Y] |
| D 501 | 264P568010 | DIODE | 1SS252 [E, G, IR, SA, Y] |
| D 5A2 | 264P342070 | DIODE | HZ4C2 |
| D 5A4 | 264P808010 | CHIP DIODE | DAN202K |
| D 5A5 | 264P808010 | CHIP DIODE | DAN202K |
| D 5A6 | 264P568010 | DIODE | 1SS252 [E, G, IR, SA, Y] |
| D 5A7 | 264P568010 | DIODE | 1SS252 [E, G, IR, SA, Y] |
| D 5A8 | 264P568010 | DIODE | 1SS252 [E, G, IR, SA, Y] |
| D 5A9 | 264P568010 | DIODE | 1SS252 [E, G, IR, SA, Y] |
| D 5B2 | 264P568010 | DIODE | 1SS252 [E, G, IR, SA, Y] |
| D 5B3 | 264P568010 | DIODE | 1SS252 [E, G, IR, SA, Y] |
| D 5B4 | 264P568010 | DIODE | 1SS252 [E, G, IR, SA, Y] |
| D 5B6 | 264P568010 | DIODE | 1SS252 [E, G, IR, SA, Y] |
| D 5B7 | 264P568010 | DIODE | 1SS252 [E, G, IR, SA, Y] |
| D 5D0 | 264P568010 | DIODE | 1SS252 [E, G, IR, SA, Y] |
| D 5V0 | 264P486020 | DIODE | RD8.2FB3 |
| D 8A1 | 264P568010 | DIODE | 1SS252 [E, G, IR, SA, Y] |
| D 8A2 | 264P568010 | DIODE | 1SS252 [E, G, IR, SA, Y] |
| D 8A4 | 264P568010 | DIODE | 1SS252 [E, G, IR] |
| D 8B0 | 264P568010 | DIODE | 1SS252 [E, G, IR, SA, Y] |
| D 8B1 | 264P568010 | DIODE | 1SS252 [E, G, IR, SA, Y] |
| D 8B2 | 264P568010 | DIODE | 1SS252 [E, G, IR, SA, Y] |
| D 8B3 | 264P568010 | DIODE | 1SS252 [E, G, IR, SA, Y] |
| D 8E1 | 264P568010 | DIODE | 1SS252 [E, G, IR, SA, Y] |
| D 8E2 | 264P568010 | DIODE | 1SS252 [E, G, IR, SA, Y] |
| D 8E3 | 264P568010 | DIODE | 1SS252 [E, G, IR, SA, Y] |
| D 8E4 | 264P568010 | DIODE | 1SS252 [E, G, IR, SA, Y] |
| D 8J0 | 264P568010 | DIODE | 1SS252 [E, G, IR, SA, Y] |
| D 8J1 | 264P568010 | DIODE | 1SS252 [E, G, IR, SA, Y] |
| D 8J2 | 264P568010 | DIODE | 1SS252 [E, G, IR, SA, Y] |
| D 8J7 | 264P568010 | DIODE | 1SS252 [E, G, IR, SA, Y] |
| D 8J8 | 264P568010 | DIODE | 1SS252 [E, G, IR, SA, Y] |
| D 8K0 | 264P568010 | DIODE | 1SS252 [E, Y] |
| D 8K1 | 264P568010 | DIODE | 1SS252 [G, Y] |
| D 8K2 | 264P568010 | DIODE | 1SS252 [E] |
| D 8K3 | 264P568010 | DIODE | 1SS252 [IR, SA] |
| D 8L0 | 264P568010 | DIODE | 1SS252 [E] |
| D 8L2 | 264P568010 | DIODE | 1SS252 [E, G] |
| D 8M0 | 264P568010 | DIODE | 1SS252 [E, G, SA, Y] |
| D 8M1 | 264P568010 | DIODE | 1SS252 [E, SA, Y] |
| D 9A1 | 264P294010 | DIODE | EM 1Z |
| D 9A2 | 264P294010 | DIODE | EM 1Z |

| SYMBOL NO. | PARTS NO. | PARTS NAME | DESCRIPTION |
|---|---|---|---|
| D 9A3 | 264P294010 | DIODE | EM 1Z |
| D 9A4 | 264P294010 | DIODE | EM 1Z |
| D 9A5 | 264P294010 | DIODE | EM 1Z |
| D 9A6 | 264P294010 | DIODE | EM 1Z |
| D 9A7 | 264P294010 | DIODE | EM 1Z |
| D 9A8 | 264P294010 | DIODE | EM 1Z |
| D 9A9 | 264P500020 | DIODE | EM01Z |
| D 9B0 | 264P500020 | DIODE | EM01Z |
| D 9B1 | 264P104040 | DIODE | HZ30-2 |
| D 9B3 | 264P452030 | DIODE | HZ5C3 |
| D 9C0 | 264P568010 | DIODE | 1SS252 [E, G, IR, SA, Y] |
| D 9C1 | 264P568010 | DIODE | 1SS252 [E, G, IR, SA, Y] |
| D 9C2 | 264P568010 | DIODE | 1SS252 [E, G, IR, SA, Y] |
| D 9C3 | 264P592010 | DIODE | HZ18-2L |
| D 9C4 | 264P500020 | DIODE | EM01Z |
| D 9C5 | 264P487080 | DIODE | RD12FB2 [G, Y] |

## COILS

| | | | |
|---|---|---|---|
| L 01 | 325C121030 | PEAKING COIL | 10 μH-K |
| L 101 | 325C122050 | PEAKING COIL | 100 μH-K |
| L 102 | 325C165020 | PEAKING COIL | 1.2 μH-J |
| L 103 | 325C170050 | PEAKING COIL | 2.2 μH-K SHIELD |
| L 104 | 325C165040 | PEAKING COIL | 1.8 μH-J |
| L 105 | 325C121040 | PEAKING COIL | 12 μH-K |
| L 106 | 323P196010 | VIF COIL | M7-T1SA-4091-5 |
| L 107 | 325C167020 | PEAKING COIL | 56 μH-J [B] |
| L 107 | 325C167000 | PEAKING COIL | 39 μH-J [E, G, Y] |
| L 107 | 325C166080 | PEAKING COIL | 27 μH-J [IR] |
| L 107 | 325C167010 | PEAKING COIL | 47 μH-J [SA] |
| L 108 | 323P196020 | VIF COIL | M7-T1SA-4092-1 |
| L 109 | 325C166020 | PEAKING COIL | 8.2 μH-J [B] |
| L 109 | 325C166000 | PEAKING COIL | 5.6 μH-J [E, G, IR, SA, Y] |
| L 201 | 325C102050 | PEAKING COIL | 100 μH-K |
| L 202 | 325C166070 | PEAKING COIL | 22 μH-J |
| L 203 | 325C167040 | PEAKING COIL | 82 μH-J |
| L 204 | 325C167070 | PEAKING COIL | 150 μH-J |
| L 205 | 325C166050 | PEAKING COIL | 15 μH-J |
| L 2A0 | 325C166090 | PEAKING COIL | 33 μH-J [E] |
| L 2A1 | 325C166060 | PEAKING COIL | 18 μH-J |
| L 2A2 | 325C167080 | PEAKING COIL | 180 μH-J |
| L 2A3 | 325C166060 | PEAKING COIL | 18 μH-J |
| L 2A6 | 325C162050 | PEAKING COIL | 100 μH-K [B, E] |
| L 2A6 | 325C167050 | PEAKING COIL | 100 μH-J [G, IR, SA, Y] |
| L 2G0 | 321C112050 | RF COIL | 100 μH-K |
| L 2G1 | 321C112050 | RF COIL | 100 μH-K |
| L 2G3 | 325C112070 | PEAKING COIL | 150 μH-K |
| L 2G4 | 325C162050 | PEAKING COIL | 100 μH-K [B, E] |
| L 2G4 | 325C167050 | PEAKING COIL | 100 μH-J [G, IR, SA, Y] |
| L 2G6 | 325C166090 | PEAKING COIL | 33 μH-J [E] |
| L 2T1 | 325C167050 | PEAKING COIL | 100 μH-J |
| L 2T3 | 325C166070 | PEAKING COIL | 22 μH-J |
| L 2301 | 325C122050 | PEAKING COIL | 100 μH-K [G, Y] |
| L 2371 | 325C120010 | PEAKING COIL | 1.0 μH-M [B, E, G, IR, Y] |
| L 2372 | 325C120050 | PEAKING COIL | 2.2 μH-M/K [B, E, G, IR, Y] |
| L 2373 | 325C121030 | PEAKING COIL | 10 μH-K [B, E, G, IR, Y] |
| L 2374 | 325C121030 | PEAKING COIL | 10 μH-K [B, E, G, IR, Y] |
| L 2375 | 325C120010 | PEAKING COIL | 1.0 μH-M [B, E, G, IR, Y] |
| L 2376 | 325C120010 | PEAKING COIL | 1.0 μH-M [B, E, G, IR, Y] |
| L 2377 | 325C120010 | PEAKING COIL | 1.0 μH-M [B, E, G, IR, Y] |
| L 2379 | 325C120050 | PEAKING COIL | 2.2 μH-M/K [B, E, G, IR, Y] |
| L 2380 | 325C121030 | PEAKING COIL | 10 μH-K [B, E, G, IR, Y] |
| L 2381 | 325C121030 | PEAKING COIL | 10 μH-K [G, Y] |
| L 2382 | 325C120010 | PEAKING COIL | 1.0 μH-M [G, Y] |
| L 2383 | 325C120010 | PEAKING COIL | 1.0 μH-M [G, Y] |
| L 2384 | 411P011010 | BEADS FERRITE | [B, E, G, IR, Y] |
| L 2385 | 411P011010 | BEADS FERRITE | [G, Y] |
| L 310 | 321C113070 | RF COIL | 1000 μH-K |
| L 311 | 321C114080 | RF COIL | 8200 μH-J |
| L 4A7 | 325C162050 | PEAKING COIL | 100 μH-K [B, E] |
| L 4A7 | 325C167050 | PEAKING COIL | 100 μH-J [G, IR, Y] |
| L 4A8 | 325C121030 | PEAKING COIL | 10 μH-K [B, E, G, IR, Y] |
| L 501 | 325C262050 | PEAKING COIL | 100 μH-K [B] |
| L 501 | 325C162050 | PEAKING COIL | 100 μH-K [E] |
| L 501 | 325C167050 | PEAKING COIL | 100 μH-J [G, IR, SA, Y] |
| L 502 | 325C146050 | CHIP COIL | 15 μH-J |
| L 503 | 325C262050 | PEAKING COIL | 100 μH-K [B] |
| L 503 | 325C162050 | PEAKING COIL | 100 μH-K [E] |
| L 503 | 325C167050 | PEAKING COIL | 100 μH-J [G, IR, SA, Y] |
| L 507 | 325C166080 | PEAKING COIL | 27 μH-J [E, G, Y] |
| L 551 | 325C262050 | PEAKING COIL | 100 μH-K [B] |
| L 551 | 325C162050 | PEAKING COIL | 100 μH-K [E] |
| L 551 | 325C167050 | PEAKING COIL | 100 μH-J [G, IR] |
| L 571 | 325C262050 | PEAKING COIL | 100 μH-K [B] |
| L 901 | 351P038010 | LINE FILTER | ELF-18D290CN [B, E, G, IR, Y] |

## TRANSFORMERS

| | | | |
|---|---|---|---|
| T 310 | 409P423030 | AUDIO BIAS OSC | 409P42301/2 |
| T 901 | 350P607030 | TRANS POWER | |

## VARIABLE RESISTORS

| | | | |
|---|---|---|---|
| VR101 | 127C381000 | VR SEMIFIXED | 1/5W B30kΩ-M |
| VR310 | 127C481020 | VR SEMIFIXED | 1/5W B100kΩ+-25% |
| VR5A0 | 127C381020 | VR SEMIFIXED | 1/5W B100kΩ-M |

## RESISTORS

| | | | |
|---|---|---|---|
| R 01 | 103P403070 | CHIP RESISTOR | 1/10W 10kΩ-J |
| R 03 | 103P404000 | CHIP RESISTOR | 1/10W 18kΩ-J |
| R 04 | 103P401020 | CHIP RESISTOR | 1/10W 82Ω-J [B, SA] |
| R 08 | 103P403070 | CHIP RESISTOR | 1/10W 10kΩ-J |
| R 11 | 103P403070 | CHIP RESISTOR | 1/10W 10kΩ-J [E, G, IR, SA, Y] |
| R 12 | 103P403070 | CHIP RESISTOR | 1/10W 10kΩ-J [E, G, IR, SA, Y] |
| R 16 | 103P404000 | CHIP RESISTOR | 1/10W 18kΩ-J |
| R 17 | 103P404080 | CHIP RESISTOR | 1/10W 82kΩ-J |
| R 101 | 103P403060 | CHIP RESISTOR | 1/10W 8.2kΩ-J |
| R 102 | 103P402050 | CHIP RESISTOR | 1/10W 1kΩ-J [E, IR, SA] |
| R 103 | 103P402030 | CHIP RESISTOR | 1/10W 680Ω-J |



| SYMBOL NO. | PARTS NO. | PARTS NAME | DESCRIPTION |
|---|---|---|---|
| R 104 | 103P401010 | CHIP RESISTOR | 1/10W 68Ω-J |
| R 108 | 103P477010 | CHIP RESISTOR | 1/10W 82kΩ-F |
| R 109 | 103P476010 | CHIP RESISTOR | 1/10W 33kΩ-F |
| R 110 | 103P476060 | CHIP METAL | 1/10W 51kΩ-F |
| R 111 | 103P401030 | CHIP RESISTOR | 1/10W 100Ω-J |
| R 112 | 103P402040 | CHIP RESISTOR | 1/10W 820Ω-J [E] |
| R 113 | 103P402020 | CHIP RESISTOR | 1/10W 560Ω-J |
| R 114 | 103P401030 | CHIP RESISTOR | 1/10W 100Ω-J |
| R 115 | 103P471090 | CHIP RESISTOR | 1/10W 560Ω-F |
| R 118 | 103P471050 | CHIP RESISTOR | 1/10W 390Ω-F [B] |
| R 118 | 103P470050 | CHIP RESISTOR | 1/10W 150Ω-F [E, G, Y] |
| R 118 | 103P471010 | CHIP RESISTOR | 1/10W 270Ω-F [IR] |
| R 118 | 103P470080 | CHIP RESISTOR | 1/10W 200Ω-F [SA] |
| R 119 | 103P401030 | CHIP RESISTOR | 1/10W 100Ω-J |
| R 120 | 103P402050 | CHIP RESISTOR | 1/10W 1kΩ-J [E, IR, SA] |
| R 128 | 103P409050 | CHIP RESISTOR | 0.1W 0Ω(2125) [E] |
| R 130 | 103P405090 | CHIP RESISTOR | 1/10W 680kΩ-J [E, G, Y] |
| R 131 | 103P403050 | CHIP RESISTOR | 1/10W 6.8kΩ-J [E, G, Y] |
| R 132 | 103P403070 | CHIP RESISTOR | 1/10W 10kΩ-J [E, G, Y] |
| R 133 | 103P403040 | CHIP RESISTOR | 1/10W 5.6kΩ-J [E, G, Y] |
| R 134 | 103P401080 | CHIP RESISTOR | 1/10W 270Ω-J [E, G, Y] |
| R 135 | 103P402010 | CHIP RESISTOR | 1/10W 470Ω-J [E, G, Y] |
| R 136 | 103P405020 | CHIP RESISTOR | 1/10W 180kΩ-J [E, G, Y] |
| R 142 | 103P404070 | CHIP RESISTOR | 1/10W 68kΩ-J [E, G, Y] |
| R 143 | 103P404010 | CHIP RESISTOR | 1/10W 22kΩ-J [E, G, Y] |
| R 144 | 103P402070 | CHIP RESISTOR | 1/10W 1.5kΩ-J [E, G, Y] |
| R 146 | 103P401030 | CHIP RESISTOR | 1/10W 100Ω-J [E, G, Y] |
| R 147 | 103P403010 | CHIP RESISTOR | 1/10W 3.3kΩ-J [E, G, Y] |
| R 150 | 103P404030 | CHIP RESISTOR | 1/10W 33kΩ-J |
| R 198 | 103P409050 | CHIP RESISTOR | 0.1W 0Ω(2125) [E] |
| R 199 | 103P406010 | CHIP RESISTOR | 1/10W 1MΩ-J [E, G, SA, Y] |
| R 202 | 103P403070 | CHIP RESISTOR | 1/10W 10kΩ-J |
| R 203 | 103P404020 | CHIP RESISTOR | 1/10W 27kΩ-J |
| R 205 | 103P405060 | CHIP RESISTOR | 1/10W 390kΩ-J |
| R 206 | 103P476060 | CHIP METAL | 1/10W 51kΩ-F |
| R 208 | 103P409050 | CHIP RESISTOR | 0.1W 0Ω(2125) [E] |
| R 209 | 103P402050 | CHIP RESISTOR | 1/10W 1kΩ-J [E, IR, SA] |
| R 210 | 103P402060 | CHIP RESISTOR | 1/10W 1.2kΩ-J [E] |
| R 211 | 103P404010 | CHIP RESISTOR | 1/10W 22kΩ-J |
| R 212 | 103P404010 | CHIP RESISTOR | 1/10W 22kΩ-J |
| R 213 | 103P401030 | CHIP RESISTOR | 1/10W 100Ω-J |
| R 214 | 103P402080 | CHIP RESISTOR | 1/10W 1.8kΩ-J |
| R 215 | 103P473000 | CHIP RESISTOR | 1/10W 1.6kΩ-F |
| R 216 | 103P472050 | CHIP RESISTOR | 1/10W 1kΩ-F |
| R 217 | 103P402050 | CHIP RESISTOR | 1/10W 1kΩ-J [E, IR, SA] |
| R 218 | 103P476000 | CHIP RESISTOR | 1/10W 30kΩ-F |
| R 220 | 103P474080 | CHIP RESISTOR | 1/10W 9.1K |
| R 221 | 103P402050 | CHIP RESISTOR | 1/10W 1kΩ-J [E, IR, SA] |
| R 223 | 103P401080 | CHIP RESISTOR | 1/10W 270Ω-J |
| R 224 | 103P402080 | CHIP RESISTOR | 1/10W 1.8kΩ-J |
| R 225 | 103P409050 | CHIP RESISTOR | 0.1W 0Ω(2125) [E] |
| R 227 | 103P409050 | CHIP RESISTOR | 0.1W 0Ω(2125) [E] |
| R 228 | 103P402050 | CHIP RESISTOR | 1/10W 1kΩ-J [E, IR, SA] |
| R 265 | 103P473030 | CHIP RESISTOR | 1/10W 2.2kΩ-F |
| R 266 | 103P473030 | CHIP RESISTOR | 1/10W 2.2kΩ-F |
| R 267 | 103P473070 | CHIP RESISTOR | 1/10W 3.3kΩ-F |
| R 268 | 103P473030 | CHIP RESISTOR | 1/10W 2.2kΩ-F |
| R 272 | 103P477050 | CHIP RESISTOR | 1/10W 120K |
| R 273 | 103P475070 | CHIP RESISTOR | 1/10W 22kΩ-F |
| R 274 | 103P476070 | CHIP RESISTOR | 1/10W 56kΩ-F |
| R 277 | 103P474090 | CHIP RESISTOR | 1/10W 10kΩ-F |
| R 278 | 103P474090 | CHIP RESISTOR | 1/10W 10kΩ-F |
| R 279 | 103P474090 | CHIP RESISTOR | 1/10W 10kΩ-F |
| R 2A0 | 103P404040 | CHIP RESISTOR | 1/10W 39kΩ-J |
| R 2A1 | 103P403090 | CHIP RESISTOR | 1/10W 15kΩ-J |
| R 2A2 | 103P473040 | CHIP RESISTOR | 1/10W 2.4kΩ-F |
| R 2A3 | 103P402040 | CHIP RESISTOR | 1/10W 820Ω-J [E] |
| R 2A4 | 103P403010 | CHIP RESISTOR | 1/10W 3.3kΩ-J |
| R 2A6 | 103P401060 | CHIP RESISTOR | 1/10W 180Ω-J |
| R 2A8 | 103P401080 | CHIP RESISTOR | 1/10W 270Ω-J [E, G, Y] |
| R 2A8 | 103P471020 | CHIP RESISTOR | 1/10W 300Ω-F [B, IR, SA] |
| R 2A9 | 103P401050 | CHIP RESISTOR | 1/10W 150Ω-J [B, IR, SA] |
| R 2A9 | 103P401080 | CHIP RESISTOR | 1/10W 270Ω-J [E, G, Y] |
| R 2B3 | 103P402030 | CHIP RESISTOR | 1/10W 680Ω-J |
| R 2B4 | 103P402050 | CHIP RESISTOR | 1/10W 1kΩ-J [E, IR, SA] |
| R 2B5 | 103P403010 | CHIP RESISTOR | 1/10W 3.3kΩ-J |
| R 2B6 | 103P401080 | CHIP RESISTOR | 1/10W 270Ω-J |
| R 2B7 | 103P404030 | CHIP RESISTOR | 1/10W 33kΩ-J |
| R 2B8 | 103P404010 | CHIP RESISTOR | 1/10W 22kΩ-J |
| R 2B9 | 103P402010 | CHIP RESISTOR | 1/10W 470Ω-J |
| R 2C0 | 103P401060 | CHIP RESISTOR | 1/10W 180Ω-J |
| R 2C1 | 103P404030 | CHIP RESISTOR | 1/10W 33kΩ-J |
| R 2C2 | 103P403090 | CHIP RESISTOR | 1/10W 15kΩ-J |
| R 2C6 | 103P401070 | CHIP RESISTOR | 1/10W 220Ω-J [E, G, IR, SA, Y] |
| R 2C7 | 103P401080 | CHIP RESISTOR | 1/10W 270Ω-J |
| R 2G1 | 103P402020 | CHIP RESISTOR | 1/10W 560Ω-J |
| R 2G2 | 103P403000 | CHIP RESISTOR | 1/10W 2.7kΩ-J |
| R 2G3 | 103P403000 | CHIP RESISTOR | 1/10W 2.7kΩ-J |
| R 2G4 | 103P403040 | CHIP RESISTOR | 1/10W 5.6kΩ-J |
| R 2G8 | 103P402050 | CHIP RESISTOR | 1/10W 1kΩ-J [E, IR, SA] |
| R 2G9 | 103P402080 | CHIP RESISTOR | 1/10W 1.8kΩ-J |
| R 2H0 | 103P402050 | CHIP RESISTOR | 1/10W 1kΩ-J [E, IR, SA] |
| R 2H1 | 103P401030 | CHIP RESISTOR | 1/10W 100Ω-J |
| R 2H2 | 103P401030 | CHIP RESISTOR | 1/10W 100Ω-J |
| R 2H3 | 103P402090 | CHIP RESISTOR | 1/10W 2.2kΩ-J |
| R 2H5 | 103P403030 | CHIP RESISTOR | 1/10W 4.7kΩ-J |
| R 2H6 | 103P402060 | CHIP RESISTOR | 1/10W 1.2kΩ-J [E] |
| R 2H7 | 103P402090 | CHIP RESISTOR | 1/10W 2.2kΩ-J |
| R 2H8 | 103P401080 | CHIP RESISTOR | 1/10W 270Ω-J [B, IR, SA] |
| R 2H8 | 103P401060 | CHIP RESISTOR | 1/10W 180Ω-J [E, G, Y] |
| R 2J0 | 103P402050 | CHIP RESISTOR | 1/10W 1kΩ-J [E, IR, SA] |
| R 2J1 | 103P402050 | CHIP RESISTOR | 1/10W 1kΩ-J [E, IR, SA] |
| R 2J2 | 103P409050 | CHIP RESISTOR | 0.1W 0Ω(2125) [B, IR, SA] |
| R 2J2 | 103P401060 | CHIP RESISTOR | 1/10W 180Ω-J [E, G, Y] |
| R 2J4 | 103P401080 | CHIP RESISTOR | 1/10W 270Ω-J |
| R 2J6 | 103P404010 | CHIP RESISTOR | 1/10W 22kΩ-J |
| R 2K2 | 103P404010 | CHIP RESISTOR | 1/10W 22kΩ-J [B] |
| R 2K3 | 103P403070 | CHIP RESISTOR | 1/10W 10kΩ-J [B] |
| R 2K7 | 103P470070 | CHIP RESISTOR | 1/10W 180Ω-F |

| SYMBOL NO. | PARTS NO. | PARTS NAME | DESCRIPTION |
|---|---|---|---|
| R 2K8 | 103P470090 | CHIP RESISTOR | 1/10W 220Ω-F |
| R 2L0 | 103P402050 | CHIP RESISTOR | 1/10W 1kΩ-J [E, IR, SA] |
| R 2L1 | 103P404080 | CHIP RESISTOR | 1/10W 82kΩ-J |
| R 2L2 | 103P409050 | CHIP RESISTOR | 0.1W 0Ω (2125) [E] |
| R 2M2 | 103P403060 | CHIP RESISTOR | 1/10W 8.2kΩ-J |
| R 2P0 | 103P401080 | CHIP RESISTOR | 1/10W 270Ω-J |
| R 2P1 | 103P402090 | CHIP RESISTOR | 1/10W 2.2kΩ-J |
| R 2R1 | 103P403090 | CHIP RESISTOR | 1/10W 15kΩ-J [B, E, IR] |
| R 2R2 | 103P404050 | CHIP RESISTOR | 1/10W 47kΩ-J [B, E, IR] |
| R 2R3 | 103P404090 | CHIP RESISTOR | 1/10W 100kΩ-J [B, E, G, IR, Y] |
| R 2R4 | 103P409090 | CHIP RESISTOR | 1/10W 75Ω-J [SA] |
| R 2S1 | 103P401070 | CHIP RESISTOR | 1/10W 220Ω-J[E, IR, SA] |
| R 2S3 | 103P402050 | CHIP RESISTOR | 1/10W 1kΩ-J [E, IR, SA] |
| R 2V0 | 103P401070 | CHIP RESISTOR | 1/10W 220Ω-J [E, G, IR] |
| R 2V1 | 103P402050 | CHIP RESISTOR | 1/10W 1kΩ-J [E, IR] |
| R 311 | 103P404030 | CHIP RESISTOR | 1/10W 33kΩ-J |
| R 312 | 103P401080 | CHIP RESISTOR | 1/10W 270Ω-J |
| R 313 | 103P401030 | CHIP RESISTOR | 1/10W 100Ω-J |
| R 315 | 103P403030 | CHIP RESISTOR | 1/10W 4.7kΩ-J |
| R 316 | 103P406010 | CHIP RESISTOR | 1/10W 1MΩ-J |
| R 317 | 103P404020 | CHIP RESISTOR | 1/10W 27kΩ-J |
| R 318 | 103P403080 | CHIP RESISTOR | 1/10W 12kΩ-J |
| R 319 | 103P403040 | CHIP RESISTOR | 1/10W 5.6kΩ-J |
| R 320 | 103P402040 | CHIP RESISTOR | 1/10W 820Ω-J [E] |
| R 325 | 103P474080 | CHIP RESISTOR | 1/10W 9.1K |
| R 326 | 103P401050 | CHIP RESISTOR | 1/10W 150Ω-J |
| R 327 | 103P402090 | CHIP RESISTOR | 1/10W 2.2kΩ-J |
| R 328 | 103P409050 | CHIP RESISTOR | 0.1W 0Ω (2125) [E] |
| R 330 | 103P404000 | CHIP RESISTOR | 1/10W 18kΩ-J |
| R 331 | 103P404020 | CHIP RESISTOR | 1/10W 27kΩ-J |
| R 332 | 103P403090 | CHIP RESISTOR | 1/10W 15kΩ-J |
| R 334 | 103P402050 | CHIP RESISTOR | 1/10W 1kΩ-J [E, IR, SA] |
| R 337 | 103P401090 | CHIP RESISTOR | 1/10W 330Ω-J |
| R 338 | 103P473080 | CHIP RESISTOR | 1/10W 3.6kΩ-F |
| R 339 | 103P473060 | CHIP RESISTOR | 1/10W 3kΩ-F |
| R 340 | 103P404000 | CHIP RESISTOR | 1/10W 18kΩ-J |
| R 3A0 | 103P402070 | CHIP RESISTOR | 1/10W 1.5kΩ-J |
| R 3A1 | 103P403010 | CHIP RESISTOR | 1/10W 3.3kΩ-J |
| R 3A2 | 103P403070 | CHIP RESISTOR | 1/10W 10kΩ-J |
| R 3A3 | 103P403070 | CHIP RESISTOR | 1/10W 10kΩ-J |
| R 3A4 | 103P403010 | CHIP RESISTOR | 1/10W 3.3kΩ-J |
| R 3A5 | 103P403070 | CHIP RESISTOR | 1/10W 10kΩ-J |
| R 3A6 | 103P478020 | CHIP RESISTOR | 1/10W 240kΩ-F |
| R 3B0 | 103P404050 | CHIP RESISTOR | 1/10W 47kΩ-J [B, E, IR, SA] |
| R 3B1 | 103P404050 | CHIP RESISTOR | 1/10W 47kΩ-J [B, E, IR] |
| R 3B3 | 103P403030 | CHIP RESISTOR | 1/10W 4.7kΩ-J |
| R 3B5 | 103P404050 | CHIP RESISTOR | 1/10W 47kΩ-J [B, E, IR, SA] |
| R 3B8 | 103P403010 | CHIP RESISTOR | 1/10W 3.3kΩ-J[B, E, IR] |
| R 3C1 | 103P404050 | CHIP RESISTOR | 1/10W 47kΩ-J [SA] |
| R 3D0 | 103P402050 | CHIP RESISTOR | 1/10W 1kΩ-J [SA] |
| R 3D1 | 103P409050 | CHIP RESISTOR | 0.1W 0Ω (2125) [E] |
| R 4A0 | 103P404090 | CHIP RESISTOR | 1/10W 100kΩ-J |
| R 4A5 | 103P403070 | CHIP RESISTOR | 1/10W 10kΩ-J |
| R 4A9 | 103P403030 | CHIP RESISTOR | 1/10W 4.7kΩ-J |
| R 4B0 | 103P402050 | CHIP RESISTOR | 1/10W 1kΩ-J [E, IR, SA] |
| R 4B2 | 103P404000 | CHIP RESISTOR | 1/10W 18kΩ-J |
| R 4B4 | 103P404030 | CHIP RESISTOR | 1/10W 33kΩ-J |
| R 4B5 | 103P405050 | CHIP RESISTOR | 1/10W 330kΩ-J |
| R 4B6 | 103P404060 | CHIP RESISTOR | 1/10W 56kΩ-J |
| R 4B7 | 103P405030 | CHIP RESISTOR | 1/10W 220kΩ-J |
| R 4B8 | 103P404040 | CHIP RESISTOR | 1/10W 39kΩ-J |
| R 4B9 | 103P405010 | CHIP RESISTOR | 1/10W 150kΩ-J |
| R 4C0 | 103P405030 | CHIP RESISTOR | 1/10W 220kΩ-J |
| R 4C1 | 103P405010 | CHIP RESISTOR | 1/10W 150kΩ-J |
| R 4C3 | 103P404040 | CHIP RESISTOR | 1/10W 39kΩ-J |
| R 4C4 | 103P403050 | CHIP RESISTOR | 1/10W 6.8kΩ-J |
| R 4C5 | 103P404010 | CHIP RESISTOR | 1/10W 22kΩ-J |
| R 4C6 | 103P405050 | CHIP RESISTOR | 1/10W 330kΩ-J |
| R 4C7 | 103P404090 | CHIP RESISTOR | 1/10W 100kΩ-J |
| R 4C8 | 103P402090 | CHIP RESISTOR | 1/10W 2.2kΩ-J |
| R 4C9 | 103P406010 | CHIP RESISTOR | 1/10W 1MΩ-J |
| R 4D0 | 103P405000 | CHIP RESISTOR | 1/10W 120kΩ-J |
| R 4D1 | 103P402050 | CHIP RESISTOR | 1/10W 1kΩ-J [E, IR, SA] |
| R 4D2 | 103P404060 | CHIP RESISTOR | 1/10W 56kΩ-J |
| R 4D3 | 103P403020 | CHIP RESISTOR | 1/10W 3.9kΩ-J |
| R 4D4 | 103P405040 | CHIP RESISTOR | 1/10W 270kΩ-J |
| R 4D5 | 103P405000 | CHIP RESISTOR | 1/10W 120kΩ-J |
| R 4D6 | 103P404000 | CHIP RESISTOR | 1/10W 18kΩ-J |
| R 4D8 | 103P404030 | CHIP RESISTOR | 1/10W 33kΩ-J |
| R 4D9 | 103P403060 | CHIP RESISTOR | 1/10W 8.2kΩ-J |
| R 4E1 | 103P403070 | CHIP RESISTOR | 1/10W 10kΩ-J |
| R 4E2 | 103P472070 | CHIP RESISTOR | 1/10W 1.2kΩ-F |
| R 4E3 | 103P472070 | CHIP RESISTOR | 1/10W 1.2kΩ-F |
| R 4E6 | 103P404060 | CHIP RESISTOR | 1/10W 56kΩ-J |
| R 4E7 | 103P403030 | CHIP RESISTOR | 1/10W 4.7kΩ-J |
| R 4E9 | 103P404020 | CHIP RESISTOR | 1/10W 27kΩ-J |
| R 4F0 | 103P404050 | CHIP RESISTOR | 1/10W 47kΩ-J |
| R 4F2 | 103P402060 | CHIP RESISTOR | 1/10W 1.2kΩ-J [E] |
| R 4F3 | 103P403070 | CHIP RESISTOR | 1/10W 10kΩ-J |
| R 4S5 | 103P403070 | CHIP RESISTOR | 1/10W 10kΩ-J [B, E, G, IR, Y] |
| R 4S6 | 103P404000 | CHIP RESISTOR | 1/10W 18kΩ-J [B, E, G, IR, Y] |
| R 4S7 | 103P409090 | CHIP RESISTOR | 1/10W 75Ω-J [B, E, G, IR, Y] |
| R 4S9 | 103P403000 | CHIP RESISTOR | 1/10W 2.7kΩ-J [B, E, G, IR, Y] |
| R 4T1 | 103P409050 | CHIP RESISTOR | 0.1W 0Ω (2125) [E] |
| R 4Z4 | 103P404090 | CHIP RESISTOR | 1/10W 100kΩ-J |
| R 503 | 103P403080 | CHIP RESISTOR | 1/10W 12kΩ-J |
| R 505 | 103P402030 | CHIP RESISTOR | 1/10W 680Ω-J |
| R 506 | 103P472070 | CHIP RESISTOR | 1/10W 1.2kΩ-F |
| R 508 | 103P409050 | CHIP RESISTOR | 0.1W 0Ω (2125) [E] |
| R 509 | 103P403070 | CHIP RESISTOR | 1/10W 10kΩ-J |
| R 510 | 103P403010 | CHIP RESISTOR | 1/10W 3.3kΩ-J |
| R 512 | 103P401090 | CHIP RESISTOR | 1/10W 330Ω-J |
| R 520 | 103P402090 | CHIP RESISTOR | 1/10W 2.2kΩ-J |
| R 521 | 103P404030 | CHIP RESISTOR | 1/10W 33kΩ-J |
| R 527 | 103P404000 | CHIP RESISTOR | 1/10W 18kΩ-J |
| R 528 | 103P403070 | CHIP RESISTOR | 1/10W 10kΩ-J |
| R 530 | 103P402000 | CHIP RESISTOR | 1/10W 390Ω-J [E, G, Y] |
| R 532 | 103P403080 | CHIP RESISTOR | 1/10W 12kΩ-J [E, G, Y] |
| R 551 | 103P402090 | CHIP RESISTOR | 1/10W 2.2kΩ-J [B, E, G, IR] |
| R 552 | 103P406010 | CHIP RESISTOR | 1/10W 1MΩ-J [B, E, G, IR] |
| R 553 | 103P404090 | CHIP RESISTOR | 1/10W 100kΩ-J [B, E, G, IR] |
| R 554 | 103P403050 | CHIP RESISTOR | 1/10W 6.8kΩ-J [B, E, G, IR] |
| R 555 | 103P406020 | CHIP METAL | 1/10W 1.2MΩ-J [B, E, G, IR] |
| R 556 | 103P403050 | CHIP RESISTOR | 1/10W 6.8kΩ-J [B, E, G, IR] |
| R 557 | 103P406020 | CHIP METAL | 1/10W 1.2MΩ-J [B, E, G, IR] |
| R 558 | 103P403070 | CHIP RESISTOR | 1/10W 10kΩ-J[B, E, G, IR] |
| R 559 | 103P403070 | CHIP RESISTOR | 1/10W 10kΩ-J[B, E, G, IR] |
| R 5A0 | 103P404030 | CHIP RESISTOR | 1/10W 33kΩ-J |
| R 5A1 | 103P403030 | CHIP RESISTOR | 1/10W 4.7kΩ-J |
| R 5A2 | 103P403070 | CHIP RESISTOR | 1/10W 10kΩ-J |
| R 5A3 | 103P404030 | CHIP RESISTOR | 1/10W 33kΩ-J |
| R 5A5 | 103P402010 | CHIP RESISTOR | 1/10W 470Ω-J |
| R 5A6 | 103P404030 | CHIP RESISTOR | 1/10W 33kΩ-J |
| R 5A7 | 103P402030 | CHIP RESISTOR | 1/10W 680Ω-J |
| R 5A8 | 103P403070 | CHIP RESISTOR | 1/10W 10kΩ-J |
| R 5A9 | 103P401070 | CHIP RESISTOR | 1/10W 220Ω-J [E, G, IR, SA, Y] |
| R 5B0 | 103P402050 | CHIP RESISTOR | 1/10W 1kΩ-J [E, IR, SA] |
| R 5B1 | 103P403070 | CHIP RESISTOR | 1/10W 10kΩ-J |
| R 5C3 | 103P403070 | CHIP RESISTOR | 1/10W 10kΩ-J |
| R 5C4 | 103P403070 | CHIP RESISTOR | 1/10W 10kΩ-J |
| R 5C5 | 103P402050 | CHIP RESISTOR | 1/10W 1kΩ-J [E, IR, SA] |
| R 5D0 | 103P403070 | CHIP RESISTOR | 1/10W 10kΩ-J |
| R 5D1 | 103P403070 | CHIP RESISTOR | 1/10W 10kΩ-J |
| R 5D4 | 103P404000 | CHIP RESISTOR | 1/10W 18kΩ-J |
| R 5D5 | 103P403090 | CHIP RESISTOR | 1/10W 15kΩ-J |
| R 5D6 | 103P403070 | CHIP RESISTOR | 1/10W 10kΩ-J |
| R 5D8 | 103P406090 | CHIP METAL | 1/10W 4.7MΩ-K |
| R 5D9 | 103P402050 | CHIP RESISTOR | 1/10W 1kΩ-J [E, IR, SA] |
| R 5E0 | 103P404050 | CHIP RESISTOR | 1/10W 47kΩ-J |
| R 5E1 | 103P478020 | CHIP RESISTOR | 1/10W 240kΩ-F |
| R 5E2 | 103P477050 | CHIP RESISTOR | 1/10W 120K |
| R 5E3 | 103P476080 | CHIP RESISTOR | 1/10W 62kΩ-F |
| R 5E4 | 103P476000 | CHIP RESISTOR | 1/10W 30kΩ-F |
| R 5E5 | 103P404090 | CHIP RESISTOR | 1/10W 100kΩ-J |
| R 5E7 | 103P476070 | CHIP RESISTOR | 1/10W 56kΩ-F |
| R 5E8 | 103P405030 | CHIP RESISTOR | 1/10W 220kΩ-J |
| R 5E9 | 103P406010 | CHIP RESISTOR | 1/10W 1MΩ-J |
| R 5F0 | 103P405070 | CHIP RESISTOR | 1/10W 470kΩ-J |
| R 5F1 | 103P403070 | CHIP RESISTOR | 1/10W 10kΩ-J |
| R 5F4 | 103P404010 | CHIP RESISTOR | 1/10W 22kΩ-J |
| R 5F6 | 103P403020 | CHIP RESISTOR | 1/10W 3.9kΩ-J |
| R 5F7 | 103P403040 | CHIP RESISTOR | 1/10W 5.6kΩ-J |
| R 5F8 | 103P403020 | CHIP RESISTOR | 1/10W 3.9kΩ-J |
| R 5G0 | 103P404010 | CHIP RESISTOR | 1/10W 22kΩ-J |
| R 5G1 | 103P403070 | CHIP RESISTOR | 1/10W 10kΩ-J |
| R 5G3 | 103P402090 | CHIP RESISTOR | 1/10W 2.2kΩ-J |
| R 5G4 | 103P403070 | CHIP RESISTOR | 1/10W 10kΩ-J |
| R 5G7 | 103P404080 | CHIP RESISTOR | 1/10W 82kΩ-J |
| R 5G9 | 103P403050 | CHIP RESISTOR | 1/10W 6.8kΩ-J |
| R 5H0 | 103P403050 | CHIP RESISTOR | 1/10W 6.8kΩ-J |
| R 5H1 | 103P404090 | CHIP RESISTOR | 1/10W 100kΩ-J |
| R 5H2 | 103P406090 | CHIP METAL | 1/10W 4.7MΩ-K |
| R 5H3 | 103P402050 | CHIP RESISTOR | 1/10W 1kΩ-J [E, IR, SA] |
| R 5H5 | 103P403070 | CHIP RESISTOR | 1/10W 10kΩ-J |
| R 5H7 | 103P404050 | CHIP RESISTOR | 1/10W 47kΩ-J |
| R 5H8 | 103P403070 | CHIP RESISTOR | 1/10W 10kΩ-J |
| R 5J0 | 103P404090 | CHIP RESISTOR | 1/10W 100kΩ-J |
| R 5J1 | 103P404060 | CHIP RESISTOR | 1/10W 56kΩ-J |
| R 5J2 | 103P403070 | CHIP RESISTOR | 1/10W 10kΩ-J |
| R 5J3 | 103P403000 | CHIP RESISTOR | 1/10W 2.7kΩ-J |
| R 5J8 | 103P403080 | CHIP RESISTOR | 1/10W 12kΩ-J |
| R 5K0 | 103P404090 | CHIP RESISTOR | 1/10W 100kΩ-J |
| R 5K2 | 103P404090 | CHIP RESISTOR | 1/10W 100kΩ-J |
| R 5K3 | 103P404030 | CHIP RESISTOR | 1/10W 33kΩ-J [B, G, IR] |
| R 5K5 | 103P403030 | CHIP RESISTOR | 1/10W 4.7kΩ-J |
| R 5K7 | 103P406010 | CHIP RESISTOR | 1/10W 1MΩ-J |
| R 5L1 | 103P404010 | CHIP RESISTOR | 1/10W 22kΩ-J |
| R 5L2 | 103P403070 | CHIP RESISTOR | 1/10W 10kΩ-J |
| R 5W5 | 103P475010 | CHIP RESISTOR | 1/10W 12kΩ-F |
| R 901 | 109D036040 | COMPOSITION | 1/2W 8.2MΩ-K |
| R 9A3 | 109P052010 | FUSE | 1/4W 100Ω-J |
| R 9A5 | 103P403090 | CHIP RESISTOR | 1/10W 15kΩ-J |
| R 9A6 | 103P476060 | CHIP METAL | 1/10W 51kΩ-F |
| R 9A7 | 103P476030 | CHIP RESISTOR | 1/10W 39kΩ-F |
| R 9A9 | 103P475010 | CHIP RESISTOR | 1/10W 12kΩ-F [E, G, IR, SA, Y] |
| R 9A9 | 103P475020 | CHIP RESISTOR | 1/10W 13kΩ-F [B] |
| R 9B0 | 103P475030 | CHIP RESISTOR | 1/10W 15kΩ-F |
| R 9B1 | 109P052050 | FUSE | 1/4W 6.8Ω-J |
| R 9B3 | 103P405080 | CHIP RESISTOR | 1/10W 560kΩ-J |
| R 9B5 | 103P404030 | CHIP RESISTOR | 1/10W 33kΩ-J |
| R 9B7 | 103P398050 | FUSE | 1/2W 2.7Ω-J [B] |
| R 9C3 | 103P403020 | CHIP RESISTOR | 1/10W 3.9kΩ-J |
| R 9C7 | 103P378090 | FUSE | 1/4W 5.6Ω-J [B] |
| RJ 3 | 103P409050 | CHIP RESISTOR | 0.1W 0Ω (2125) [E] |
| RJ 5 | 103P409050 | CHIP RESISTOR | 0.1W 0Ω (2125) [E] |
| RJ 7 | 103P409050 | CHIP RESISTOR | 0.1W 0Ω (2125) [E] |
| RJ 8 | 103P409050 | CHIP RESISTOR | 0.1W 0Ω (2125) [E] |
| RJ 9 | 103P409050 | CHIP RESISTOR | 0.1W 0Ω (2125) [E] |
| RJ 10 | 103P409050 | CHIP RESISTOR | 0.1W 0Ω (2125) [E] |
| RJ 11 | 103P409050 | CHIP RESISTOR | 0.1W 0Ω (2125) [E] |
| RJ 12 | 103P409050 | CHIP RESISTOR | 0.1W 0Ω (2125) [E] |
| RJ 13 | 103P409050 | CHIP RESISTOR | 0.1W 0Ω (2125) [E] |
| RJ 14 | 103P409050 | CHIP RESISTOR | 0.1W 0Ω (2125) [E] |
| RJ 15 | 103P409050 | CHIP RESISTOR | 0.1W 0Ω (2125) [E] |
| RJ 206 | 103P409050 | CHIP RESISTOR | 0.1W 0Ω (2125) [B, G, IR, SA, Y] |
| RJ 210 | 103P409050 | CHIP RESISTOR | 0.1W 0Ω (2125) [SA] |

| SYMBOL NO. | PARTS NO. | PARTS NAME | DESCRIPTION | |
|---|---|---|---|---|
| RJ 211 | 103P409050 | CHIP RESISTOR | 0.1W 0Ω (2125) | [B, G, IR, SA, Y] |
| RJ102 | 103P409050 | CHIP RESISTOR | 0.1W 0Ω (2125) | [E] |
| RJ103 | 103P409050 | CHIP RESISTOR | 0.1W 0Ω (2125) | [E] |
| RJ104 | 103P409050 | CHIP RESISTOR | 0.1W 0Ω (2125) | [E] |
| RJ105 | 103P409050 | CHIP RESISTOR | 0.1W 0Ω (2125) | [E] |
| RJ106 | 103P409050 | CHIP RESISTOR | 0.1W 0Ω (2125) | [E] |
| RJ201 | 103P409050 | CHIP RESISTOR | 0.1W 0Ω (2125) | [E] |
| RJ202 | 103P409050 | CHIP RESISTOR | 0.1W 0Ω (2125) | |
| RJ203 | 103P409050 | CHIP RESISTOR | 0.1W 0Ω (2125) | [E] |
| RJ204 | 103P409050 | CHIP RESISTOR | 0.1W 0Ω (2125) | [E] |
| RJ205 | 103P409050 | CHIP RESISTOR | 0.1W 0Ω (2125) | [E] |
| RJ206 | 103P409050 | CHIP RESISTOR | 0.1W 0Ω (2125) | [E] |
| RJ207 | 103P409050 | CHIP RESISTOR | 0.1W 0Ω (2125) | [E] |
| RJ208 | 103P409050 | CHIP RESISTOR | 0.1W 0Ω (2125) | [E] |
| RJ209 | 103P409050 | CHIP RESISTOR | 0.1W 0Ω (2125) | [E] |
| RJ211 | 103P409050 | CHIP RESISTOR | 0.1W 0Ω (2125) | [E] |
| RJ401 | 103P409050 | CHIP RESISTOR | 0.1W 0Ω (2125) | [E] |
| RJ402 | 103P409050 | CHIP RESISTOR | 0.1W 0Ω (2125) | [E] |
| RJ403 | 103P409050 | CHIP RESISTOR | 0.1W 0Ω (2125) | [E] |
| RJ404 | 103P409050 | CHIP RESISTOR | 0.1W 0Ω (2125) | [E] |
| RJ405 | 103P409050 | CHIP RESISTOR | 0.1W 0Ω (2125) | [E, SA] |
| RJ408 | 103P409050 | CHIP RESISTOR | 0.1W 0Ω (2125) | [E] |
| RJ501 | 103P409050 | CHIP RESISTOR | 0.1W 0Ω (2125) | [E] |
| RJ502 | 103P409050 | CHIP RESISTOR | 0.1W 0Ω (2125) | [E] |
| RJ503 | 103P409050 | CHIP RESISTOR | 0.1W 0Ω (2125) | [E] |
| RJ504 | 103P409050 | CHIP RESISTOR | 0.1W 0Ω (2125) | [E] |
| RJ505 | 103P409050 | CHIP RESISTOR | 0.1W 0Ω (2125) | [E] |
| RJ506 | 103P409050 | CHIP RESISTOR | 0.1W 0Ω (2125) | [E] |
| RJ507 | 103P409050 | CHIP RESISTOR | 0.1W 0Ω (2125) | [E] |
| RJ508 | 103P409050 | CHIP RESISTOR | 0.1W 0Ω (2125) | [E] |
| RJ509 | 103P409050 | CHIP RESISTOR | 0.1W 0Ω (2125) | [E] |

## CAPACITORS AND TRIMMERS

| SYMBOL NO. | PARTS NO. | PARTS NAME | DESCRIPTION | |
|---|---|---|---|---|
| C 101 | 141P132010 | CHIP CAPACITOR | B50V 0.01μF-K | |
| C 102 | 141P132010 | CHIP CAPACITOR | B50V 0.01μF-K | |
| C 104 | 141P132010 | CHIP CAPACITOR | B50V 0.01μF-K | |
| C 105 | 141P132010 | CHIP CAPACITOR | B50V 0.01μF-K | |
| C 106 | 154P331010 | CHIP CAPACITOR | CH50V 10pF-C | |
| C 107 | 141P132010 | CHIP CAPACITOR | B50V 0.01μF-K | |
| C 108 | 141P139030 | CHIP CAPACITOR | B25V 0.1μF-K | |
| C 109 | 141P132010 | CHIP CAPACITOR | B50V 0.01μF-K | |
| C 112 | 141P132010 | CHIP CAPACITOR | B50V 0.01μF-K | |
| C 114 | 141P132010 | CHIP CAPACITOR | B50V 0.01μF-K | |
| C 117 | 154P331050 | CHIP CAPACITOR | CH50V 15pF-J | |
| C 118 | 141P132010 | CHIP CAPACITOR | B50V 0.01μF-K | |
| C 119 | 154P321060 | CHIP CAPACITOR | SL50V 15pF-J | [B] |
| C 119 | 154P321080 | CHIP CAPACITOR | SL50V 18pF-J | [E] |
| C 119 | 154P322060 | CHIP CAPACITOR | SL50V 39pF-J | [IR] |
| C 122 | 141P133080 | CHIP CAPACITOR | F50V 0.01μF-Z | [E, G, Y] |
| C 124 | 141P134010 | CHIP CAPACITOR | F50V 0.047M | [E, G, Y] |
| C 126 | 141P131020 | CHIP CAPACITOR | B50V 1800pF-K | [E, G, Y] |
| C 127 | 154P325080 | CHIP CAPACITOR | SL50V 820pF | [E, G, Y] |
| C 130 | 141P130060 | CHIP CAPACITOR | B50V 560pF-K | |
| C 131 | 141P130060 | CHIP CAPACITOR | B50V 560pF-K | |
| C 132 | 141P137080 | CHIP CAPACITOR | B25V 0.047M | |
| C 199 | 141P130090 | CHIP CAPACITOR | B50V 1000pF-K | |
| C 201 | 141P139030 | CHIP CAPACITOR | B25V 0.1μF-K | |
| C 202 | 141P136030 | CHIP CAPACITOR | F16V 1μF-Z | |
| C 203 | 141P136030 | CHIP CAPACITOR | F16V 1μF-Z | |
| C 204 | 154P322060 | CHIP CAPACITOR | SL50V 39pF-J | |
| C 205 | 154P322060 | CHIP CAPACITOR | SL50V 39pF-J | |
| C 206 | 141P136030 | CHIP CAPACITOR | F16V 1μF-Z | |
| C 207 | 141P136030 | CHIP CAPACITOR | F16V 1μF-Z | |
| C 208 | 154P322080 | CHIP CAPACITOR | SL50V 47pF-J | |
| C 209 | 154P322080 | CHIP CAPACITOR | SL50V 47pF-J | |
| C 210 | 141P139030 | CHIP CAPACITOR | B25V 0.1μF-K | |
| C 212 | 141P132000 | CHIP CAPACITOR | B50V 8200pF-K | |
| C 213 | 154P333010 | CHIP CAPACITOR | CH50V 68pF-J | |
| C 214 | 141P139030 | CHIP CAPACITOR | B25V 0.1μF-K | |
| C 215 | 154P323000 | CHIP CAPACITOR | SL50V 56pF-J | |
| C 216 | 154P322080 | CHIP CAPACITOR | SL50V 47pF-J | |
| C 217 | 154P323040 | CHIP CAPACITOR | SL50V 82pF-J | |
| C 218 | 154P324020 | CHIP CAPACITOR | SL50V 180pF-J | |
| C 219 | 141P132000 | CHIP CAPACITOR | B50V 8200pF-K | |
| C 220 | 141P137080 | CHIP CAPACITOR | B25V 0.047M | |
| C 221 | 141P130090 | CHIP CAPACITOR | B50V 1000pF-K | |
| C 222 | 141P132000 | CHIP CAPACITOR | B50V 8200pF-K | |
| C 231 | 141P130090 | CHIP CAPACITOR | B50V 1000pF-K | [B] |
| C 231 | 141P139030 | CHIP CAPACITOR | B25V 0.1μF-K | [E, G, IR, SA, Y] |
| C 275 | 141P133080 | CHIP CAPACITOR | F50V 0.01μF-Z | |
| C 276 | 141P130090 | CHIP CAPACITOR | B50V 1000pF-K | |
| C 277 | 154P323040 | CHIP CAPACITOR | SL50V 82pF-J | |
| C 2A1 | 141P132010 | CHIP CAPACITOR | B50V 0.01μF-K | [G, Y] |
| C 2A2 | 141P132000 | CHIP CAPACITOR | B50V 8200pF-K | |
| C 2A3 | 154P325020 | CHIP CAPACITOR | SL50V 470pF | |
| C 2A4 | 154P323020 | CHIP CAPACITOR | SL50V 68pF-J | |
| C 2A5 | 154P325000 | CHIP CAPACITOR | SL50V 390pF-J | |
| C 2A6 | 141P132000 | CHIP CAPACITOR | B50V 8200pF-K | |
| C 2A7 | 154P322060 | CHIP CAPACITOR | SL50V 39pF-J | |
| C 2A8 | 154P322040 | CHIP CAPACITOR | SL50V 33pF-J | [E, G, Y] |
| C 2A8 | 154P321080 | CHIP CAPACITOR | SL50V 18pF-J | [B, IR, SA] |
| C 2A9 | 154P321060 | CHIP CAPACITOR | SL50V 15pF-J | [G, Y] |
| C 2B0 | 141P132000 | CHIP CAPACITOR | B50V 8200pF-K | |
| C 2B1 | 141P132000 | CHIP CAPACITOR | B50V 8200pF-K | |
| C 2B2 | 141P132000 | CHIP CAPACITOR | B50V 8200pF-K | |
| C 2G0 | 154P325000 | CHIP CAPACITOR | SL50V 390pF-J | |
| C 2G1 | 154P322000 | CHIP CAPACITOR | SL50V 22pF-J | |
| C 2G2 | 141P137040 | CHIP CAPACITOR | B25V 0.022M | |
| C 2G4 | 141P137040 | CHIP CAPACITOR | B25V 0.022M | |
| C 2G6 | 141P139030 | CHIP CAPACITOR | B25V 0.1μF-K | |
| C 2H0 | 141P132000 | CHIP CAPACITOR | B50V 8200pF-K | |
| C 2H4 | 141P132010 | CHIP CAPACITOR | B50V 0.01μF-K | |
| C 2H9 | 141P137080 | CHIP CAPACITOR | B25V 0.047M | |
| C 2J1 | 154P322060 | CHIP CAPACITOR | SL50V 39pF-J | |
| C 2J2 | 154P323020 | CHIP CAPACITOR | SL50V 68pF-J | |
| C 2J8 | 154P323000 | CHIP CAPACITOR | SL50V 56pF-J | [B, E, IR] |
| C 2K0 | 141P132000 | CHIP CAPACITOR | B50V 8200pF-K | |
| C 2K1 | 141P132000 | CHIP CAPACITOR | B50V 8200pF-K | |



| SYMBOL NO. | PARTS NO. | PARTS NAME | DESCRIPTION | |
|---|---|---|---|---|
| C 2K4 | 141P132000 | CHIP CAPACITOR | B50V 8200pF-K | |
| C 2K5 | 154P324040 | CHIP CAPACITOR | SL50V 220pF-J | [B, IR, SA] |
| C 2K5 | 154P324020 | CHIP CAPACITOR | SL50V 180pF-J | [E, G, Y] |
| C 2K6 | 154P321060 | CHIP CAPACITOR | SL50V 15pF-J | |
| C 2K8 | 154P323000 | CHIP CAPACITOR | SL50V 56pF-J | [B, E, IR] |
| C 2L0 | 141P132000 | CHIP CAPACITOR | B50V 8200pF-K | |
| C 2L1 | 141P132000 | CHIP CAPACITOR | B50V 8200pF-K | |
| C 2L3 | 141P132000 | CHIP CAPACITOR | B50V 8200pF-K | |
| C 2L6 | 141P132000 | CHIP CAPACITOR | B50V 8200pF-K | |
| C 2L7 | 141P132000 | CHIP CAPACITOR | B50V 8200pF-K | |
| C 2L8 | 141P139030 | CHIP CAPACITOR | B25V 0.1μF-K | |
| C 2L9 | 141P132000 | CHIP CAPACITOR | B50V 8200pF-K | |
| C 2M3 | 141P132000 | CHIP CAPACITOR | B50V 8200pF-K | |
| C 2M4 | 141P132000 | CHIP CAPACITOR | B50V 8200pF-K | |
| C 2T1 | 154P322060 | CHIP CAPACITOR | SL50V 39pF-J | |
| C 2T3 | 154P324080 | CHIP CAPACITOR | SL50V 330pF-J | |
| C 2Y0 | 141P132000 | CHIP CAPACITOR | B50V 8200pF-K | |
| C 310 | 141P132000 | CHIP CAPACITOR | B50V 8200pF-K | |
| C 311 | 141P130080 | CHIP CAPACITOR | B50V 820pF-K | |
| C 318 | 141P131080 | CHIP CAPACITOR | B50V 5600pF-K | |
| C 328 | 141P130060 | CHIP CAPACITOR | B50V 560pF-K | |
| C 331 | 141P132010 | CHIP CAPACITOR | B50V 0.01μF-K | |
| C 338 | 141P132000 | CHIP CAPACITOR | B50V 8200pF-K | |
| C 345 | 141P130090 | CHIP CAPACITOR | B50V 1000pF-K | [B, E, G, IR, Y] |
| C 3A2 | 141P138040 | CHIP CAPACITOR | B25V 0.15MK | |
| C 3A3 | 141P138040 | CHIP CAPACITOR | B25V 0.15MK | |
| C 3B4 | 141P132000 | CHIP CAPACITOR | B50V 8200pF-K | |
| C 3D0 | 154P324080 | CHIP CAPACITOR | SL50V 330pF-J | [SA] |
| C 4A3 | 141P137070 | CHIP CAPACITOR | B25V 0.039μF-K | |
| C 4A5 | 141P132000 | CHIP CAPACITOR | B50V 8200pF-K | |
| C 4A6 | 154P332010 | CHIP CAPACITOR | CH50V 27pF-J | [B, E, G, IR, Y] |
| C 4A7 | 154P324020 | CHIP CAPACITOR | SL50V 180pF-J | |
| C 4A9 | 141P131060 | CHIP CAPACITOR | B50V 3900pF-K | |
| C 4B3 | 141P133090 | CHIP CAPACITOR | F50V 0.022M | |
| C 4B4 | 141P133080 | CHIP CAPACITOR | F50V 0.01μF-Z | |
| C 4B6 | 141P131010 | CHIP CAPACITOR | B50V 1500pF | |
| C 4C1 | 141P131050 | CHIP CAPACITOR | B50V 3300pF-K | |
| C 4C2 | 141P139030 | CHIP CAPACITOR | B25V 0.1μF-K | |
| C 4C3 | 141P139010 | CHIP CAPACITOR | B25V 0.068MK | |
| C 4C4 | 141P131080 | CHIP CAPACITOR | B50V 5600pF-K | |
| C 4C5 | 141P131080 | CHIP CAPACITOR | B50V 5600pF-K | |
| C 4C6 | 141P139000 | CHIP CAPACITOR | B25V 0.056μF-K | |
| C 4C9 | 141P130090 | CHIP CAPACITOR | B50V 1000pF-K | |
| C 4D5 | 141P130090 | CHIP CAPACITOR | B50V 1000pF-K | |
| C 4E0 | 141P130090 | CHIP CAPACITOR | B50V 1000pF-K | |
| C 4G7 | 154P333050 | CHIP CAPACITOR | CH50V 100pF-J | [B, E, G, IR, Y] |
| C 4G8 | 154P333050 | CHIP CAPACITOR | CH50V 100pF-J | [B, E, G, IR, Y] |
| C 4J0 | 154P331070 | CHIP CAPACITOR | CH50V 18pF-J | [B, E, G, IR, Y] |
| C 501 | 154P330040 | CHIP CAPACITOR | CJ50V 3pF-C | |
| C 502 | 154P330040 | CHIP CAPACITOR | CJ50V 3pF-C | |
| C 505 | 154P331090 | CHIP CAPACITOR | CH50V 22pF-J | |
| C 507 | 154P331090 | CHIP CAPACITOR | CH50V 22pF-J | |
| C 510 | 141P137080 | CHIP CAPACITOR | B25V 0.047M | |
| C 512 | 141P133080 | CHIP CAPACITOR | F50V 0.01μF-Z | |
| C 514 | 141P133080 | CHIP CAPACITOR | F50V 0.01μF-Z | |
| C 525 | 154P322080 | CHIP CAPACITOR | SL50V 47pF-J | [E, G, Y] |
| C 551 | 154P324000 | CHIP CAPACITOR | SL50V 150pF-J | [B, E, G, IR] |
| C 552 | 141P137060 | CHIP CAPACITOR | B50V 0.033μF-K | [B, E, G, IR] |
| C 554 | 141P131030 | CHIP CAPACITOR | B50V 2200pF-K | [B, E, G, IR] |
| C 555 | 141P137060 | CHIP CAPACITOR | B50V 0.033μF-K | [B, E, G, IR] |
| C 556 | 141P132010 | CHIP CAPACITOR | B50V 0.01μF-K | [B, E, G, IR] |
| C 5A0 | 189P197020 | C-ELE-DOUBLE-LAYER | FM0H473Z | |
| C 5A3 | 154P331070 | CHIP CAPACITOR | CH50V 18pF-J | |
| C 5A4 | 141P133080 | CHIP CAPACITOR | F50V 0.01μF-Z | |
| C 5A5 | 141P133080 | CHIP CAPACITOR | F50V 0.01μF-Z | |
| C 5A6 | 141P130060 | CHIP CAPACITOR | B50V 560pF-K | |
| C 5B3 | 141P131030 | CHIP CAPACITOR | B50V 2200pF-K | |
| C 5B5 | 141P131010 | CHIP CAPACITOR | B50V 1500pF | |
| C 5B6 | 141P132000 | CHIP CAPACITOR | B50V 8200pF-K | |
| C 5B7 | 141P132000 | CHIP CAPACITOR | B50V 8200pF-K | |
| C 5D5 | 141P135080 | CHIP CAPACITOR | F25V 0.1μF-Z | |
| C 5D6 | 141P134010 | CHIP CAPACITOR | F50V 0.047M | |
| C 5D8 | 141P133080 | CHIP CAPACITOR | F50V 0.01μF-Z | |
| C 5E3 | 141P133090 | CHIP CAPACITOR | F50V 0.022M | |
| C 5E4 | 141P133090 | CHIP CAPACITOR | F50V 0.022M | |
| C 5E5 | 141P133090 | CHIP CAPACITOR | F50V 0.022M | |
| C 5F0 | 141P134020 | CHIP CAPACITOR | F50V 0.1μF-Z | |
| C 5F1 | 154P331010 | CHIP CAPACITOR | CH50V 10pF-C | |
| C 5F2 | 154P331070 | CHIP CAPACITOR | CH50V 18pF-J | |
| C 5F3 | 154P330090 | CHIP CAPACITOR | CH50V 8pF-C | |
| C 5F4 | 141P134010 | CHIP CAPACITOR | F50V 0.047M | |
| C 5K0 | 141P133080 | CHIP CAPACITOR | F50V 0.01μF-Z | |
| C 901 | 189P153040 | C-METAL-P-FILM | AC250V 0.1μF-M | [B, E, G, IR, Y] |
| C 902 | 189P153040 | C-METAL-P-FILM | AC250V 0.1μF-M | [B, E, G, IR, Y] |
| C 9A9 | 141P139030 | CHIP CAPACITOR | B25V 0.1μF-K | |
| C 9C0 | 141P133080 | CHIP CAPACITOR | F50V 0.01μF-Z | |
| C 9C1 | 141P133080 | CHIP CAPACITOR | F50V 0.01μF-Z | |

## SWITCHES

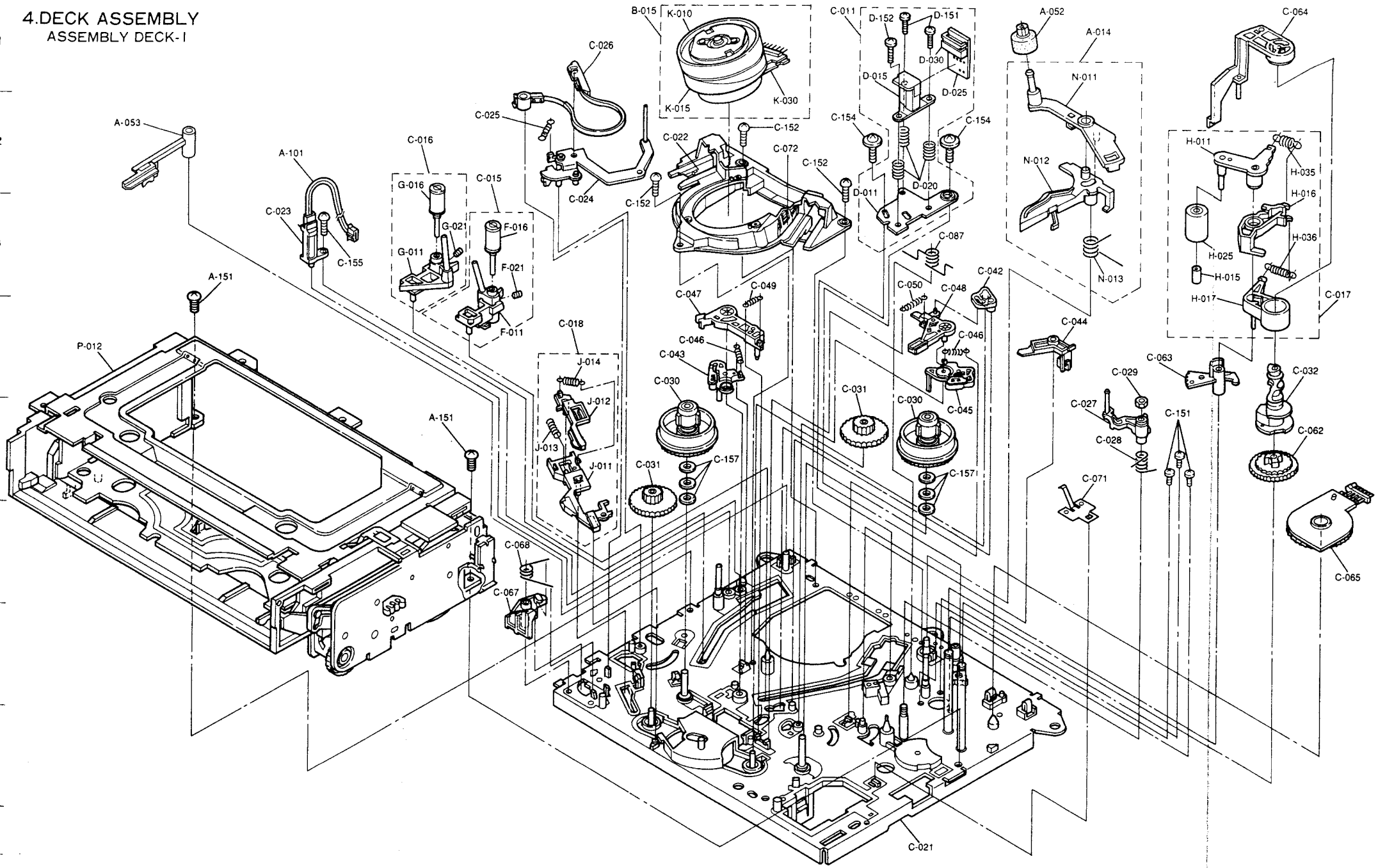
| SYMBOL NO. | PARTS NO. | PARTS NAME | DESCRIPTION | |
|---|---|---|---|---|
| S 101 | 431C106010 | SLIDE SWITCH | TV/VTR | |
| S 5A0 | 439P033010 | SWITCH | RIS MPU10101MMBO | |
| S 5A1 | 432P166010 | KEY BOARD SWITCH | RESET | |
| S 8A1 | 432P089040 | KEY BOARD SWITCH | PLAY | |
| S 8A2 | 432P089020 | KEY BOARD SWITCH | POWER | |
| S 8A4 | 432P089040 | KEY BOARD SWITCH | AUTO SET UP/JUST CLOCK | [B, E, G, IR] |
| S 8B1 | 432P089040 | KEY BOARD SWITCH | STOP | |
| S 8B2 | 432P089020 | KEY BOARD SWITCH | EJECT | |
| S 8C1 | 432P089040 | KEY BOARD SWITCH | REC/OTR | |
| S 8C2 | 432P089040 | KEY BOARD SWITCH | ONE KEY PROGRAM | |
| S 8D1 | 432P089040 | KEY BOARD SWITCH | PAUSE | |
| S 8D2 | 432P089020 | KEY BOARD SWITCH | RENT PB | |
| S 8J0 | 439P034010 | SWITCH JOG | JOG/SHUTTLE | |

| SYMBOL NO. | PARTS NO. | PARTS NAME | DESCRIPTION | |
|---|---|---|---|---|
| **MISCELLANEOUS** | | | | |
| | CU 01 | 295P406030 | RF CONVERTER | [B] |
| | CU 01 | 295P406020 | RF CONVERTER | [E, G, Y] |
| | CU 01 | 295P406040 | RF CONVERTER | [IR] |
| ○ | CU 01 | 295P276070 | RF CONVERTER | [SA] |
| | F 901 | 283D046080 | FUSE | T630MA |
| | F 902 | 283D047050 | FUSE | T2.5A |
| | F 903 | 283D047050 | FUSE | T2.5A |
| | J 2A1 | 440C236060 | PIN JACK(4P) | WHT2, YEL2 [SA] |
| | J 2301 | 451C058020 | CONNECTOR | 21P [B, E, G, IR, Y] |
| | J 2302 | 451C058020 | CONNECTOR | 21P [B, E, G, IR, Y] |
| ○ | J 5A1 | 451C129020 | JACK MICROPHONE | [B] |
| ○ | J 8A0 | 440C267040 | PIN JACK(2P) | YEL, WHT, SP |
| | M 470 | 288P126010 | MOTOR CAPSTAN | F2QKB79 |
| | M 570 | 288P088060 | MOTOR DRUM | DC12V 3.3W |
| | M 571 | 288P145010 | MOTOR LOADING | DC12V 3W |
| ○ | MF TF | 243C155040 | LEAD CARD | 9P L=140(MZ-PZ) |
| | MK TK | 243C165070 | LEAD CARD | 29P L200(MK-TK) |
| | P 5A0 | 286P010010 | BUZZER | PKM22EPT-2001 |
| | S 570 | 439D039010 | MODE SELECT SWICH | (J) |
| | T 370 | 460P060060 | A/C HEAD | |
| | T 371 | 460P153010 | FULL ERASE HEAD | FE HEAD |
| | TU 01 | 295P418010 | TUNER | TEKE4-071A [E, G, IR, Y] |
| | TU 01 | 295P194020 | TUNER TV | TERB1-044A [B] |
| | TU 01 | 295P254040 | TUNER TV | ENV-79808F2 [SA] |
| | V 8A0 | 253P119010 | TUBE FLUOR | 10-MT-79GK |
| | X 2A0 | 285P083010 | CRYSTAL RESONATOR | 4.43362MHz |
| | X 4A0 | 285P248010 | CRYSTAL RESONATOR | 4.43MHz [B, E, G, IR, Y] |
| | X 501 | 285P084010 | CRYSTAL RESONATOR | 17.7345MHz |
| ○ | X 571 | 285P029040 | CRYSTAL RESONATOR | 4.00000MHz [B] |
| | X 5A0 | 285P054030 | CRYSTAL RESONATOR | 32.8kHz |
| | X 5A1 | 285P235010 | CRYSTAL RESONATOR | 8.3886MHz |
| | Z 8A0 | 939P580010 | PREAMP UNIT | TFMT 5330 |
| **PRINTED CIRCUIT BOARD ASSY'S** | | | | |
| | | 928C878001 | CONNECTOR PCB ASSY | [B, E, IR] |
| ○ | | 928C878003 | CONNECTOR PCB ASSY | [G, Y] |
| ○ | | 927B875007 | HA/AUDIO PCB ASSY | [B, E, IR, Y] |
| ○ | | 927B875008 | HA/AUDIO PCB ASSY | [G] |
| ○ | | 927B875009 | HA/AUDIO PCB ASSY | [SA] |
| | | 928C854001 | JACK PCB ASSY | [SA] |
| ○ | | 928D318001 | LED PCB ASSY | [B] |
| ○ | | 927B874001 | MAIN PCB ASSY | [B] |
| ○ | | 927B874004 | MAIN PCB ASSY | [E] |
| ○ | | 927B874002 | MAIN PCB ASSY | [G] |
| ○ | | 927B874005 | MAIN PCB ASSY | [IR] |
| ○ | | 927B874007 | MAIN PCB ASSY | [SA] |
| ○ | | 927B874003 | MAIN PCB ASSY | [Y] |
| ○ | | 928C877001 | SAT PCB ASSY | [B] |
| ○ | | 928D317001 | TIMER PCB ASSY | [B] |
| ○ | | 928D317004 | TIMER PCB ASSY | [E] |
| ○ | | 928D317002 | TIMER PCB ASSY | [G] |
| ○ | | 928D317005 | TIMER PCB ASSY | [IR] |
| ○ | | 928D317007 | TIMER PCB ASSY | [SA] |

| SYMBOL NO. | PARTS NO. | PARTS NAME | DESCRIPTION | |
|---|---|---|---|---|
| ○ | | 928D317003 | TIMER PCB ASSY | [Y] |

# 4.DECK ASSEMBLY

## ASSEMBLY DECK-I

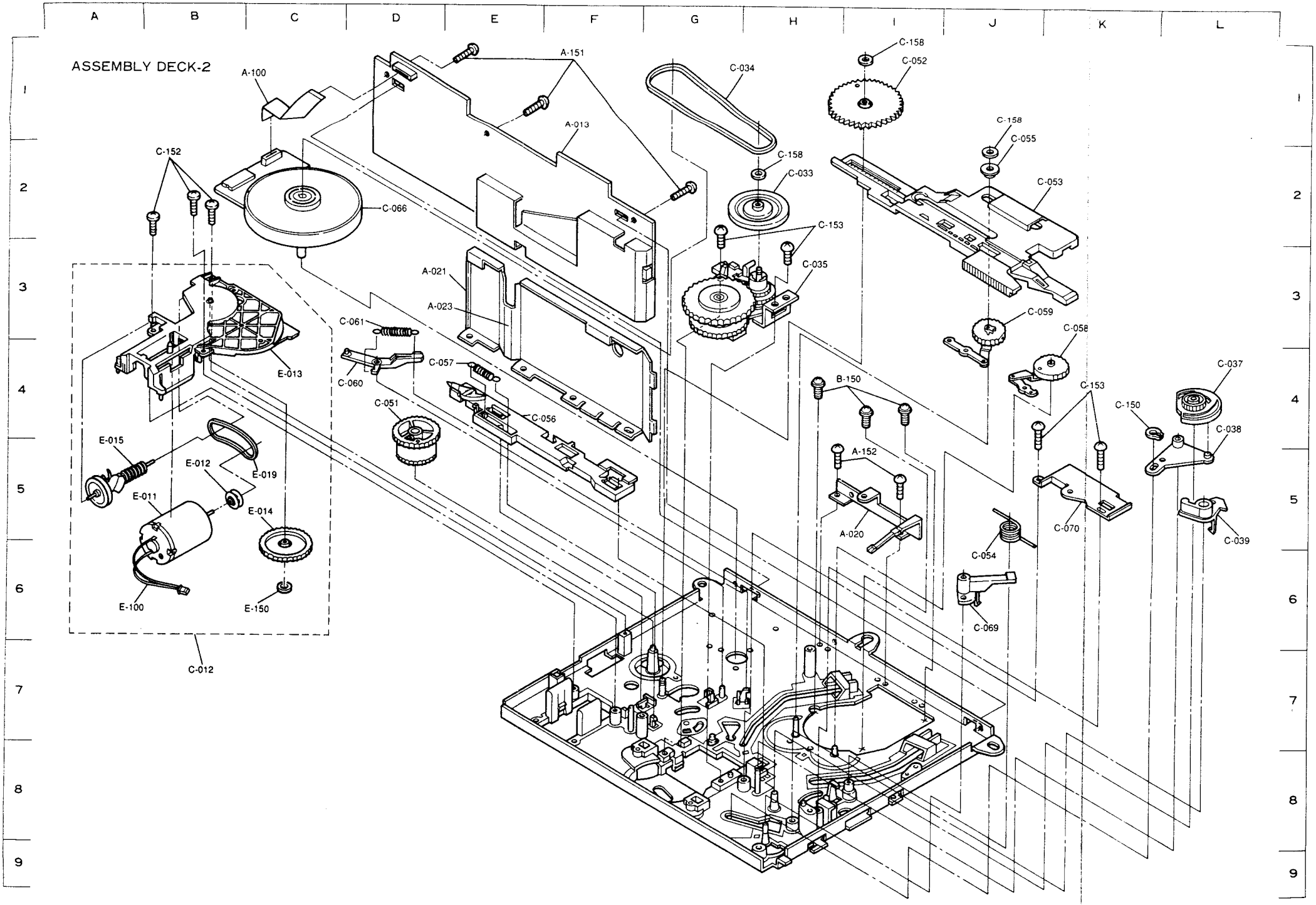


* Settelled Service Parts

| ITEM | PARTS No. | * | ADDRESS | PARTS NAME | DESCRIPTION | Qt. |
|---|---|---|---|---|---|---|
| A-012 | 948A155006 | ○ | A-4 | ASSY-F/L-J | | 01 |
| A-014 | 948B349001 | | K-2 | ASSY-CLE | | 01 |
| N-011 | 641B680010 | ○ | K-2 | ARM-CLE | | 01 |
| N-012 | 641B681010 | ○ | K-3 | LEVER-CLE | | 01 |
| N-013 | 572D703010 | ○ | K-3 | SPRING-CLE | | 01 |
| B-015 | 948B342007 | ○ | G-2 | ASSY-DRUM | | 01 |
| K-010 | 927B723014 | ○ | G-1 | ASSY-UPPR-DRUM | | 01 |
| K-015 | 927B722003 | | G-2 | ASSY-LOWER-DRUM | | 01 |
| K-030 | 288P088060 | ○ | H-2 | MOTOR-DRUM | M570 | 01 |
| C-011 | 928D104002 | ○ | I-1 | ASSY-A/C-HEAD | | 01 |
| D-011 | 593C399010 | | I-2 | PLATE-A/C | | 01 |
| D-015 | 460P060060 | ○ | I-1 | HEAD | T370 | 01 |
| D-020 | 572D639010 | | I-2 | SPRING-A/C | | 03 |
| D-025 | 215C730010 | | J-1 | PWB-A/C-JA | | 01 |
| D-030 | 452C140060 | | J-1 | CONNECTOR-PC2M(S) | | 01 |
| D-151 | 669D483010 | | I-1 | SCREW | M2. 6X8 | 02 |
| D-152 | 669D485010 | | I-1 | SCREW | 2. 6X8 | 01 |
| C-015 | 948D042001 | ○ | E-3 | ASSY-TAPE-GUIDE-T | | 01 |
| C-015 | 948D042002 | ○ | E-3 | ASSY-TAPE-GUIDE-T | | 01 |
| C-015 | 948D042003 | ○ | E-3 | ASSY-TAPE-GUIDE-T | | 01 |
| F-011 | 635B085010 | ○ | E-4 | TAPE-GUIDE-T | | 01 |
| F-011 | 635B085020 | ○ | E-4 | TAPE-GUIDE-T | | 01 |
| F-011 | 635B085030 | ○ | E-4 | TAPE-GUIDE-T | | 01 |
| F-016 | 522D177010 | ○ | E-3 | GUIDE-ROLLER | | 01 |
| F-021 | 669D197020 | | E-4 | SET-SCREW-F | D=M3X0. 5 L=4 | 01 |
| C-016 | 948D043001 | ○ | D-3 | ASSY-TAPE-GUIDE-S | | 01 |
| C-016 | 948D043002 | ○ | D-3 | ASSY-TAPE-GUIDE-S | | 01 |
| C-016 | 948D043003 | ○ | D-3 | ASSY-TAPE-GUIDE-S | | 01 |
| G-011 | 635B086010 | ○ | D-3 | TAPE-GUIDE-S | | 01 |
| G-011 | 635B086020 | ○ | D-3 | TAPE-GUIDE-S | | 01 |
| G-011 | 635B086030 | ○ | D-3 | TAPE-GUIDE-S | | 01 |
| G-016 | 522D177010 | ○ | D-3 | GUIDE-ROLLER | | 01 |
| G-021 | 669D197020 | | E-3 | SET-SCREW-F | D=M3X0. 5 L=4 | 01 |
| C-017 | 948D044001 | ○ | M-3 | ASSY-ARM-PINCH | | 01 |
| H-011 | 593C465010 | | L-2 | ARM-PINCH | | 01 |
| H-015 | 622D235010 | ○ | L-3 | CAP-ROLLER | | 01 |
| H-016 | 621C243010 | | M-3 | LEVER-PINCH | | 01 |
| H-017 | 621C241010 | | M-3 | SLIDER-PINCH | | 01 |
| H-025 | 522D174010 | ○ | L-3 | ROLLER-PINCH | | 01 |
| H-035 | 572D314010 | ○ | M-2 | SPRING-PINCH | | 01 |
| H-036 | 572D714010 | ○ | M-3 | SPRING-CAM-PINCH | | 01 |
| C-018 | 948C315001 | | F-4 | ASSY-CHARGE | | 01 |
| J-011 | 641B629010 | ○ | F-6 | LEVER-SWING-ID | | 01 |
| J-012 | 621C238010 | ○ | F-5 | LEVER-REV | | 01 |
| J-013 | 572D684010 | | F-5 | SPRING-CHARGE | | 01 |
| J-014 | 572D624010 | ○ | F-5 | SPRING-REV | | 01 |
| C-021 | 948A159001 | | I-9 | ASSY-MAIN-PLATE | | 01 |
| C-022 | 635A038030 | | G-2 | DRUM-BASE | | 01 |
| C-023 | 460P153010 | ○ | C-3 | HEAD-FE | T371 | 01 |

* Settelled Service Parts

| ITEM | PARTS No. | * | ADDRESS | | PARTS NAME | DESCRIPTION | Qt. |
|---|---|---|---|---|---|---|---|
| C-024 | 592B049010 | ○ | F-3 | | ARM-TENSION | | 01 |
| C-025 | 572D627010 | ○ | F-2 | | SPRING-TENS | | 01 |
| C-026 | 641B624020 | ○ | F-2 | | BELT-TENS-BRAKE | | 01 |
| C-027 | 635B084010 | ○ | K-5 | | ARM-TU-G | | 01 |
| C-028 | 572D647010 | ○ | K-5 | | SPRING-TU-G | | 01 |
| C-029 | 674D081020 | ○ | K-5 | | NUT-NYLON | M3X0. 5 | 01 |
| C-030 | 522C092010 | ○ | I-5 | G-5 | UNIT-REEL-DISK | | 02 |
| C-031 | 621C234010 | ○ | I-5 | G-6 | GEAR-R | | 02 |
| C-032 | 641B630010 | ○ | M-4 | | CAM-PINCH-J | | 01 |
| C-042 | 621C315010 | ○ | J-4 | | LEVER-SUB-OFF | | 01 |
| C-043 | 641B635020 | ○ | G-4 | | BRAKE-MAIN-S | | 01 |
| C-044 | 622D219010 | ○ | K-4 | | LEVER-RELEASE-M/B | | 01 |
| C-045 | 641B634020 | ○ | J-4 | | BRAKE-MAIN-T | | 01 |
| C-046 | 572D635010 | ○ | H-4 | J-4 | SPRING-M/B-J | | 02 |
| C-047 | 641B633010 | ○ | G-4 | | BRAKE-SUB-S | | 01 |
| C-048 | 641B632020 | ○ | I-4 | | BRAKE-SUB-T | | 01 |
| C-049 | 572D623010 | ○ | H-4 | | SPRING-SUB-S | | 01 |
| C-050 | 572D625010 | | I-4 | | SPRING-SUB-T | | 01 |
| C-062 | 621C240010 | ○ | M-5 | | GEAR-PINCH | | 01 |
| C-063 | 635C098010 | ○ | L-4 | | GEAR-TU-G | | 01 |
| C-064 | 641B628010 | ○ | M-1 | | CAP-CAM-PINCH | | 01 |
| C-065 | 439P039010 | ○ | N-6 | | SW-MODE-J | S570 | 01 |
| C-067 | 641B641010 | ○ | E-7 | | LEVER-RIS | | 01 |
| C-068 | 572D646010 | ○ | E-6 | | SPRING-RIS | | 01 |
| C-071 | 597D102010 | | K-5 | | PLATE-EB | | 01 |
| C-072 | 572D712010 | ○ | H-3 | | SPRING-DB | | 01 |
| C-087 | 572D697010 | | I-3 | | SPRING-AC-EARTH | | 01 |
| C-151 | 669D285040 | | L-5 | | SCREW-TB-PAN | M2. 6X8 | 03 |
| C-152 | 669D224020 | | G-3 | H-2 | SCREW-TB | 2. 6X8 | 03 |
| | | | I-3 | | | | |
| C-154 | 669D476020 | ○ | I-2 | J-2 | SCREW-TB-SEMS | 2. 6X8 | 02 |
| C-155 | 669D224030 | | D-3 | | SCREW-TB | 2. 6X10 | 01 |
| C-157 | 552C017030 | ○ | G-5 | J-5 | WASHER-THRUST | 2. 5X6X0. 13 | 06 |
| A-052 | 621C033010 | ○ | J-1 | | UNIT-CLE-ROLLER | | 01 |
| A-053 | 621C344010 | ○ | | | LEVER-TG | | 01 |
| A-101 | 248B173040 | | C-3 | | LEAD-CONNECTOR-S | | 01 |
| A-120 | 641C685010 | | E-7 | | CLAMPER-LEAD-F/L | | 01 |
| A-151 | 669D224020 | | B-4 | E-5 | SCREW-TB | 2. 6X8 | 02 |


ASSEMBLY DECK-2
A-100
A-151
A-013
C-034
C-158
C-052
C-158
C-055
C-053
C-152
C-066
C-158
C-033
C-153
C-035
A-021
A-023
C-061
C-060
C-057
C-056
C-051
E-013
E-015
E-012
E-019
E-011
E-014
E-100
E-150
C-012
C-059
C-058
B-150
C-153
C-150
C-037
C-038
A-152
A-020
C-070
C-039
C-054
C-069

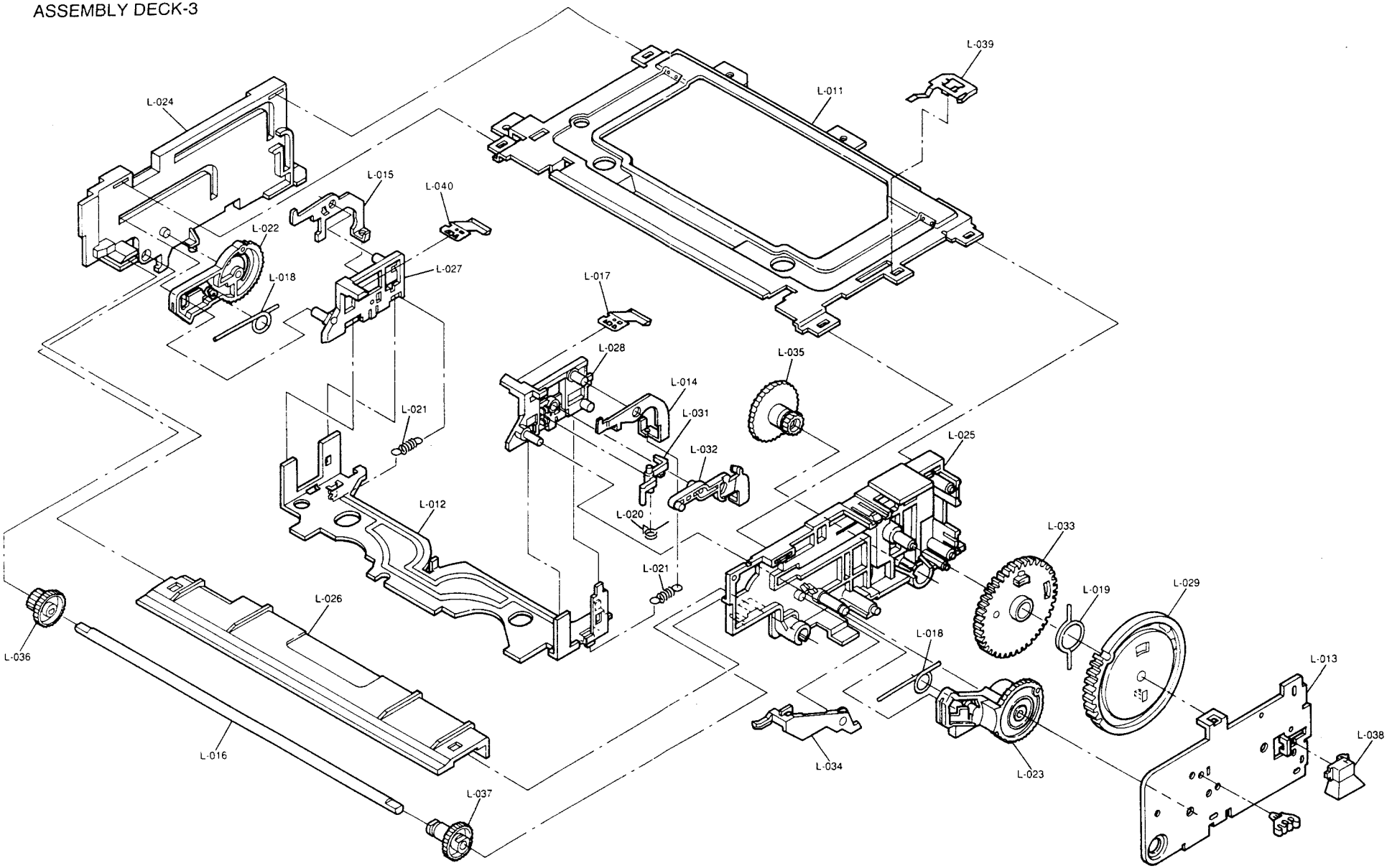
* Settelled Service Parts

| ITEM | PARTS No. | * | ADDRESS | | PARTS NAME | DESCRIPTION | Qt. |
|---|---|---|---|---|---|---|---|
| A-013 | 927D875007 | ○ | F-2 | | ASSY-PWB-HA/AUDIO | [B, E, IR, Y] | 01 |
| A-013 | 927D875008 | ○ | F-2 | | ASSY-PWB-HA/AUDIO | [G] | 01 |
| A-013 | 927D875009 | ○ | F-2 | | ASSY-PWB-HA/AUDIO | [SA] | 01 |
| C-012 | 928D105002 | ○ | B-7 | | ASSY-L-MOTOR | | 01 |
| E-011 | 288D145010 | ○ | B-5 | | MOTOR-LOADING | | 01 |
| E-012 | 622D220020 | | B-5 | | PULLEY-MOTOR | | 01 |
| E-013 | 641B727010 | | C-4 | | HOLDER-MOTOR-J | | 01 |
| E-014 | 621C258010 | ○ | C-6 | | GEAR-A | | 01 |
| E-015 | 621C259010 | ○ | A-5 | | PULLEY-WORM-J | | 01 |
| E-019 | 521D088010 | ○ | C-5 | | BELT-LM2 | | 01 |
| E-100 | 2488173020 | | B-6 | | LEAD-CONNECTOR-S | | 01 |
| E-150 | 552C018020 | ○ | C-6 | | CUT-WASHER | 2.5X4.7X0.5 | 01 |
| A-020 | 299C030010 | ○ | I-5 | | BRUSH | | 01 |
| A-021 | 292B204010 | | D-3 | | SHIELD-PLATE-HAK | | 01 |
| A-023 | 223D533010 | | D-3 | | BARRIER-HA | | 01 |
| A-100 | 243C125010 | ○ | C-1 | | LEAD-CARD | | 01 |
| A-151 | 669D224020 | | E-1 | E-2 | SCREW-TB | 2.6X8 | 03 |
| | | | G-2 | | | | |
| A-152 | 669D224010 | | I-5 | | SCREW-TB | 2.6X6 | 02 |
| B-150 | 669D200020 | | I-4 | | SCREW-SEMS | M2.6X0.45-6 | 03 |
| C-033 | 621C254010 | ○ | H-2 | | PULLEY-BELT | | 01 |
| C-034 | 521D081010 | ○ | G-1 | | BELT-REEL-J | | 01 |
| C-035 | 522B057030 | ○ | H-3 | | UNIT-REEL-IDLER | | 01 |
| C-037 | 621C235010 | ○ | L-4 | | CAM-GEAR-R | | 01 |
| C-038 | 622D229010 | ○ | L-5 | | LEVER-CHARGE | | 01 |
| C-039 | 622D223010 | ○ | L-5 | | LEVER-T-OFF | | 01 |
| C-051 | 621C257010 | ○ | D-5 | | GEAR-JOINT-J | | 01 |
| C-052 | 641B637010 | ○ | I-1 | | MAIN-GEAR-J | | 01 |
| C-053 | 641A311010 | ○ | J-2 | | PLATE-CAM-B | | 01 |
| C-054 | 572D640010 | | J-5 | | SPRING-CAM-B | | 01 |
| C-055 | 622D224010 | ○ | J-2 | | ROLLER-B | | 01 |
| C-056 | 641B636010 | ○ | E-4 | | PLATE-CAM-C | | 01 |
| C-057 | 572D636010 | ○ | E-4 | | SPRING-CAM-C | | 01 |
| C-058 | 592B048010 | ○ | K-4 | | ARM-LOAD-S | | 01 |
| C-059 | 592B047010 | ○ | J-4 | | ARM-LOAD-T | | 01 |
| C-060 | 621C261010 | ○ | D-4 | | BRAKE-CP | | 01 |
| C-061 | 572D645010 | ○ | D-3 | | SPRING-B-CP | | 01 |
| C-066 | 288P126010 | ○ | C-2 | | MOTOR-CP | M470 | 01 |
| C-069 | 621C308010 | ○ | J-6 | | ARM-RIS | | 01 |
| C-070 | 593C532010 | ○ | K-5 | | PLATE-J | | 01 |
| C-150 | 685C009010 | ○ | K-4 | | GRIP-RING | | 01 |
| C-152 | 669D224020 | | B-2 | | SCREW-TB | 2.6X8 | 03 |
| C-153 | 669D224010 | | K-4 | K-5 | SCREW-TB | 2.6X6 | 04 |
| | | | G-3 | H-3 | | | |
| C-158 | 552C018010 | ○ | J-2 | I-1 | CUT-WASHER | 2.5X6.0X0.5 | 03 |
| | | | H-2 | | | | |

* Settelled Service Parts

| ITEM | PARTS No. | * | ADDRESS | | PARTS NAME | DESCRIPTION | Qt. |
|---|---|---|---|---|---|---|---|
| L-011 | 592B156010 | | H-1 | | PLATE-ROOF-J | | 01 |
| L-012 | 592B150010 | | D-5 | | PLATE-BOTTOM-J | | 01 |
| L-013 | 592B157010 | | L-6 | | PLATE-SIDE-J | | 01 |
| L-014 | 596D986010 | | G-4 | | LEVER-LOCK-T | | 01 |
| L-015 | 596D987010 | | D-2 | | LEVER-LOCK-S | | 01 |
| L-016 | 631D443010 | | C-7 | | SHAFT-FL | | 01 |
| L-017 | 572D634010 | | F-3 | | PLATE-SPR | | 01 |
| L-018 | 572D631010 | ○ | C-3 | I-6 | SPRING-ARM | | 02 |
| L-019 | 572D632010 | | J-6 | | SPRING-CHIP | | 01 |
| L-020 | 572D633010 | | F-5 | | SPRING-JUT | | 01 |
| L-021 | 572D630020 | | D-4 | F-6 | SPRING-LOCK-T | | 02 |
| L-022 | 621C250010 | ○ | C-3 | | ARM-SP | | 01 |
| L-023 | 641B719010 | | J-7 | | ARM-TU | | 01 |
| L-024 | 641A360010 | | B-2 | | HOLDER-SIDE-SP | | 01 |
| L-025 | 641A718010 | | I-4 | | HOLDER-SIDE-TU | | 01 |
| L-026 | 621C249010 | | D-6 | | GUIDE-INSERT | | 01 |
| L-027 | 641B626010 | | E-3 | | HOLDER-CAS-SP | | 01 |
| L-028 | 641B638010 | | F-4 | | HOLDER-CAS-TU | | 01 |
| L-029 | 641B625010 | ○ | K-6 | | GEAR-SENS | | 01 |
| L-031 | 622D231010 | ○ | G-4 | | JUT-J | | 01 |
| L-032 | 621C245010 | | G-5 | | OPENER-LID | | 01 |
| L-033 | 622D227010 | ○ | J-5 | | GEAR-DRIVE | | 01 |
| L-034 | 622D230010 | ○ | H-7 | | ARM-DOOR | | 01 |
| L-035 | 621C252010 | ○ | H-4 | | GEAR-WHEEL | | 01 |
| L-036 | 622D225010 | ○ | A-6 | | GEAR-S | | 01 |
| L-037 | 622D226010 | ○ | E-8 | | GEAR-T | | 01 |
| L-038 | 622D228010 | | L-7 | | COVER-SENS | | 01 |
| L-039 | 597D085010 | | I-1 | | PLATE-EARTH | | 01 |
| L-040 | 572D634020 | | E-2 | | PLATE-SPR | | 01 |

ASSEMBLY DECK-3



# HS-541V(B)/V(E)/V(G) /V(IR)/V(Y) PCB-BLOCK DIAGRAM

8 9 10 11 12 13 14 15 16

△PCB-HEAD AMP

△PCB-POWER-SUB

△PCB-MAIN
Y/C
TUNER
MC
SERVO
CG/VPS
POWER

△PCB-CONNECTOR

△PCB-TIMER

△PCB-SAT

△PCB-SAT-LED

△DECK

SAT-CONT

HS-541V(B) ONLY

TUNER-TV △TU01

BOOSTER-CONVERTER △CU01

⚠
SERVICING PRECAUTION

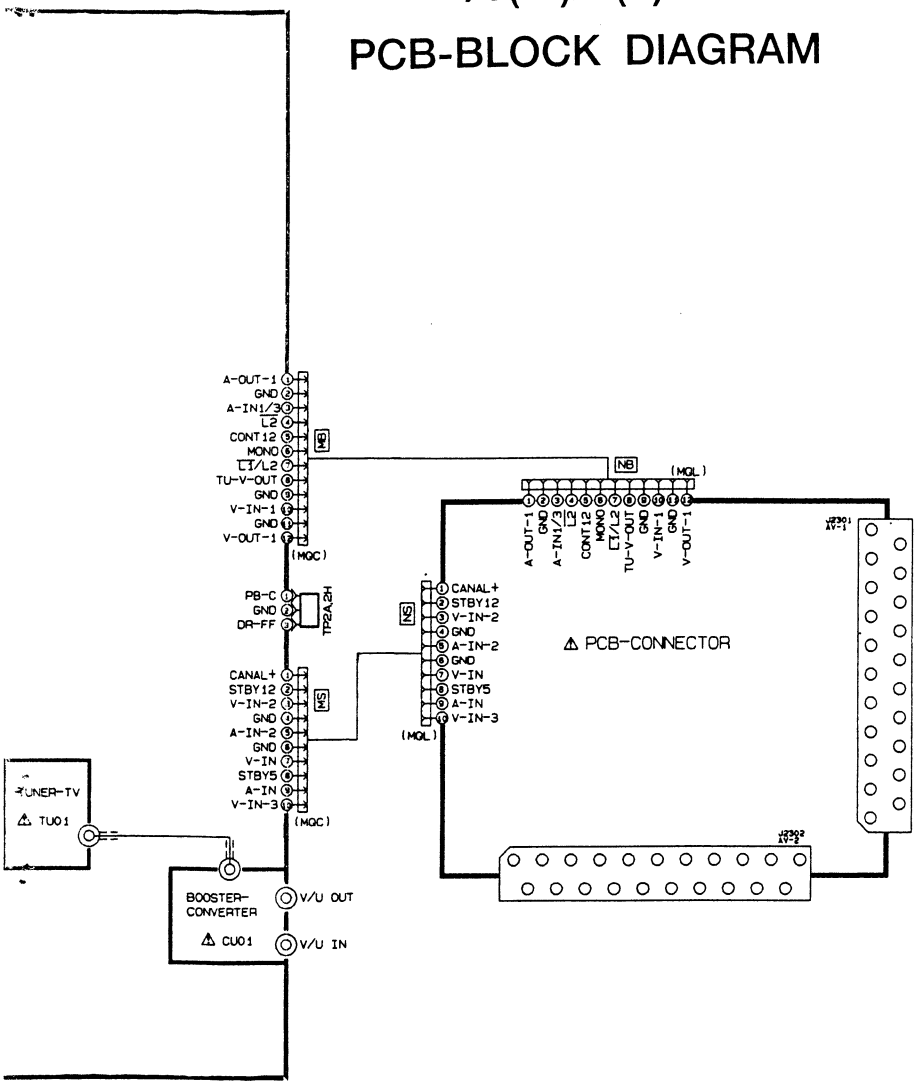
SYMBOLS INDICATE COMPONENTS HAVING SPECIAL CHARACTERISTICS IMPORTANT TO SAFETY AND PERFORMANCE. THEREFOR REPLACEMENT OF ANY SAFETY PARTS SHOULD BE IDENTICAL IN VALUE AND CHARACTERISTICS.
DON'T DEGRADE THE SAFETY OF THE VCR THROUGH IMPROPER SERVICING.

CONTENTS


| | | | |
|---|---|---|---|
| ① | PCB-BLOCK DIAGRAM | ⑥ | PCB-MAIN (SERVO) |
| ② | PCB-MAIN (TUNER/VIF) PCB-CONNECTOR | ⑦ | PCB-MAIN (CG/VPS) (POWER) PCB-POWER-SUB |
| ③ | PCB-MAIN (Y/C) | ⑧ | PCB-TIMER |
| ④ | PCB-HEAD AMP (HA/AUDIO) | ⑨ ~ ⑪ | PATTERN |
| ⑤ | PCB-MAIN (MC) | | |

# HS-541V(B)/V(E)/V(G) /V(IR)/V(Y)

# PCB-BLOCK DIAGRAM




| | CONTENTS | | |
|---|---|---|---|
| ① | PCB-BLOCK DIAGRAM | ⑥ | PCB-MAIN (SERVO) |
| ② | PCB-MAIN (TUNER/VIF) PCB-CONNECTOR | ⑦ | PCB-MAIN (CG/VPS) (POWER) PCB-POWER-SUB |
| ③ | PCB-MAIN (Y/C) | ⑧ | PCB-TIMER |
| ④ | PCB-HEAD AMP (HA/AUDIO) | ⑨ ~ ⑪ | PATTERN |
| ⑤ | PCB-MAIN (MC) | | |



# SCHEMATIC DIAGRAM

• **NOTE**

1. Each voltage should be within ±20% of the DC voltages measured with a digital voltmeter.
2. The voltages parenthesised are on SP recording mode. While those without parenthesised on SP play back mode.
3. Waveforme were taken with standard colour bar signal.
4. TP6A, etc. show Test Points.

5. CAPACITORS

| | | | |
|---|---|---|---|
| Value | Not indicated | PF, for numbers more than 1<br>μF, for numbers less than 1 | |
| Dielectric Strength | Not indicated :50V | | |
| Tolerance | Not indicated =±10% | No Tolerance is indicated for electrolytic capacitors and ±20% | |
| | G=±2%<br>J=±5%<br>K=±10%<br>M=±20% | P=+100%<br>−0%<br>Z=+80%<br>−20% | Q=+30%<br>−10%<br>T=+200%<br>−0% |
| | C=±0.25PF<br>D=±0.5PF<br>F=±1PF<br>G=±2PF | | |
| Sort | I Parts except for chips | Not indicated : Ceramic capacitor<br>(MF) : Polyester capacitor<br>(PP) : Polypropylene film capacitor<br>(ALM) : Aluminus electrolytic capacitor<br>(TF) : Twin film capacitor<br>(SC) : Semiconductor ceramic capacitor<br>(MP) : Metalized paper<br>(MPP) : Metalized plastic film capacitor<br>(MMF) : Metalized polyester capacitor<br>(MF.PP) : Polyester polypropylene film capacitor<br>(PS) : Styrol capacitor<br>(TAN) or (TANT) : Tantalum capacitor<br>— : Electrolytic capacitor<br>(BP) or (NP) : Non polarized electrolytic capacitor | |
| | II Chips | Not indicated : Ceramic capacitor chip<br>— : Electrolytic capacitor<br>(BP) or (NP) : Non polarized electrolytic capacitor chip | |
| Characteristic (only ceramic capacitor) | Not indicated : F or B(high dielectric percentage)<br>CH,SL,etc. : Temperature compensating types | | |

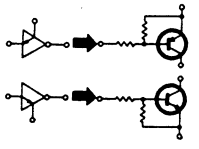
6. Resistors

| | | |
|---|---|---|
| Value | Not indicated = Ω<br>K = kΩ(1000Ω)<br>M = MΩ(1000kΩ) | |
| Wattage | Parts except for chips | Not indicated = 1/4W or 1/6W |
| | Chips | Not indicated = 1/10W |
| Tolerance | Not indicated =±5%<br>D=±0.5% J=±5%<br>F=±1% K=±10% | |
| Short | I Parts except for chips | Not indicated : Carbon resistor<br>(S) : Fixed composition resistor<br>(MB) : Metal oxide film resistor(type B)<br>(CE) : Cemented resister<br>(W) : Wire wound resister<br>(M) : Metal film resister<br>(MPC) : Metal plate cement resister<br>(ML) : Metal liner resister |
| | II Chip | Not indicated : Chip resistor |

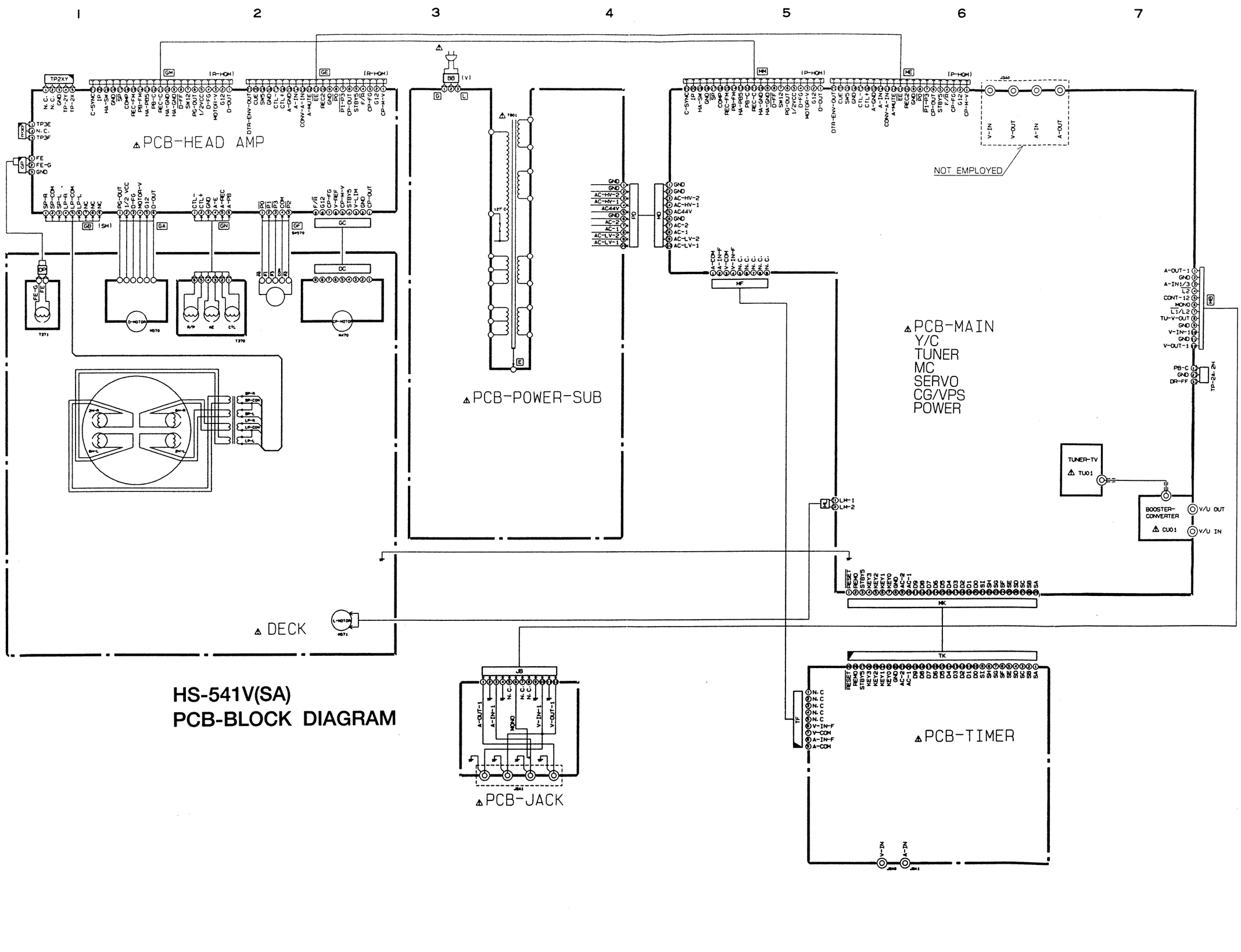
7. This is a basic schematic diagram. Some sets may be subject to modification according to engineering improvement.

**SPECIFIC SYMBOL**

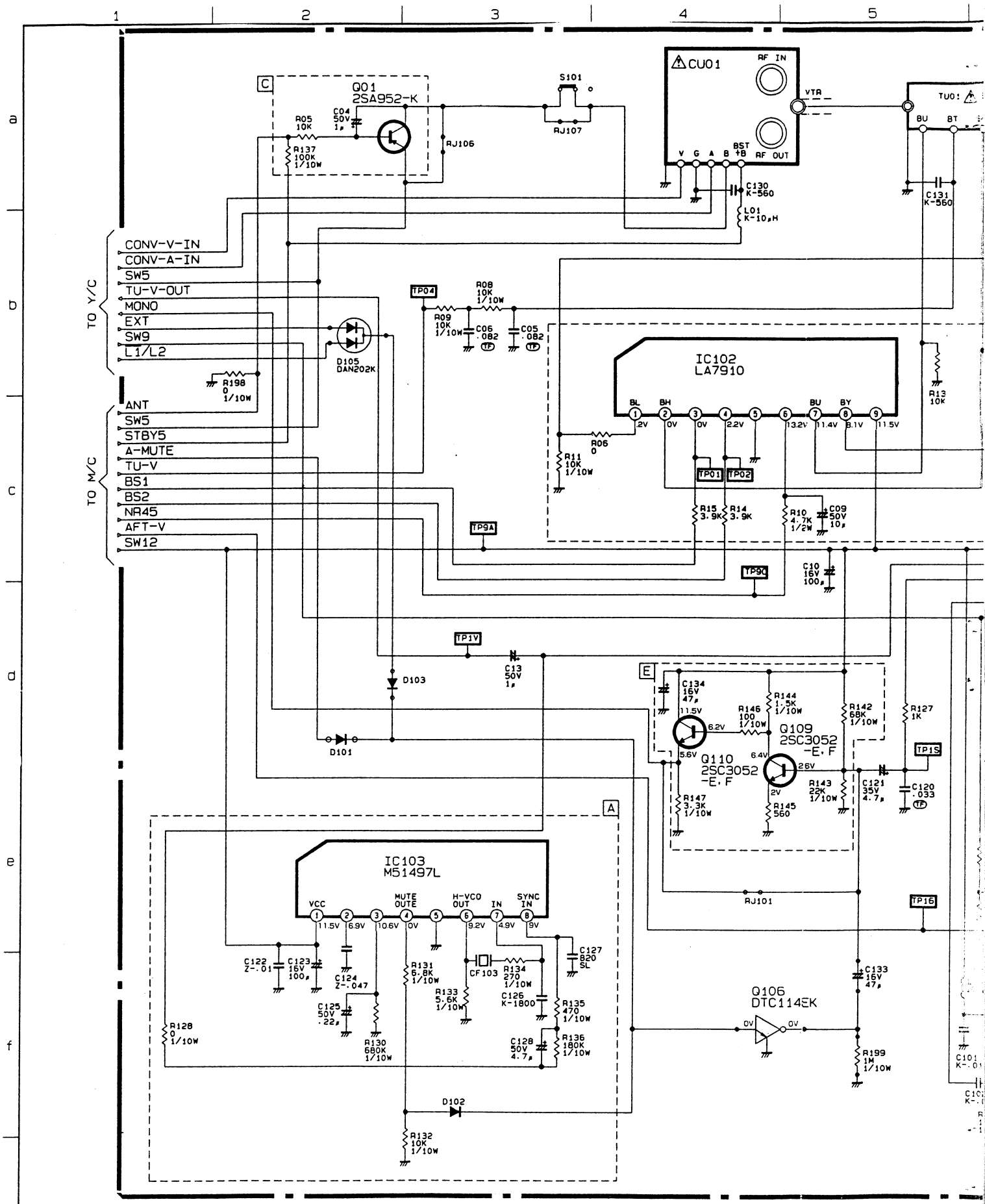
| | |
|---|---|
| Zener Diode | Crystal unit |
| Varicap | LE Diode |
| | Photo Diode |
| Thermistor | Ceramic filter |
| Fusible Resistor | |



# HS-541V(SA)
# PCB-BLOCK DIAGRAM




⚠
SERVICING PREC
SYMBOLS INDIC
CHARACTERISTICS
FORMANCE. THER
TY PARTS SHOULI
ACTERISTICS.
DON'T DEGRADE
IMPROPER SERVIC



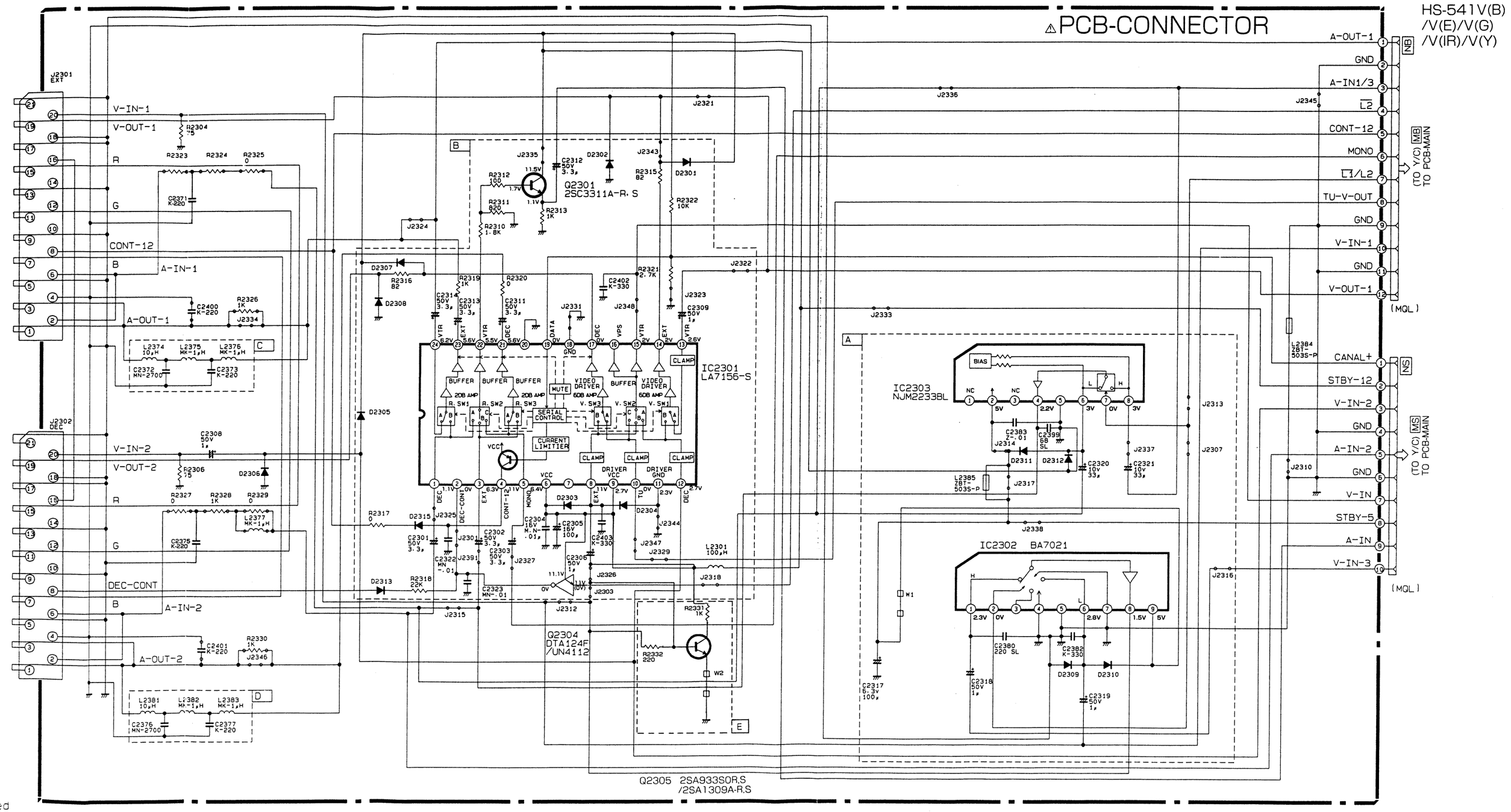

HS-541V(B)/V(E)/V(G)
/V(IR)/V(SA)/V(Y)

2

ALL DIODES ARE 1SS252/1SS131 UNLESS OTHER

HS-541V(B)
/V(E)/V(G)
/V(IR)/V(Y)

⚠PCB-CONNECTOR



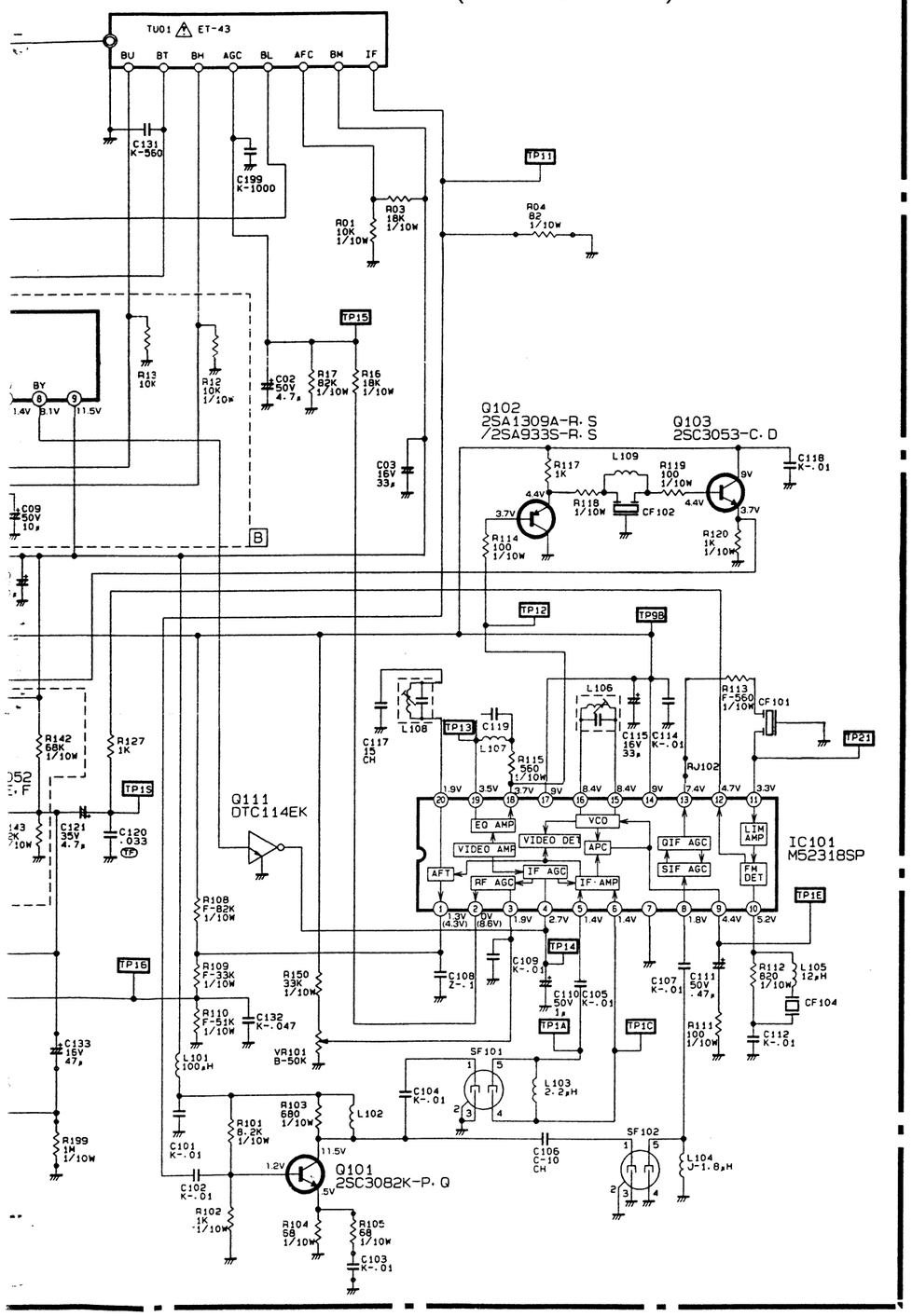

ed

oloyed

All diodes are 1SS252/1SS1310M unless otherwise specified.

| | e-4 | e-5 | a-7 | d~f, 7~9 | c-4 | d-2 | b-10 | f-3 | b-4 | b-3 | c-7 | d-9 | d-9 | d-8 | e-10 | d-8 | d-9 | e-8 | e-2 | e-3 | f-3 | d-10 | e-3 | c-3 | c-3 | d-8 | e-8 | e-5 | e-5 | e-6 | b-2 | b-2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DL | J2315 | J2312 | J2336 | A AREA | B AREA | C AREA | J2345 | D AREA | J2324 | J2321 | J2333 | J2307 | J2313 | J2314 | J2316 | J2317 | J2337 | J2338 | C2401 | R2330 | J2346 | J2310 | L2377 | J2334 | R2326 | L2385 | W1 | J2303 | J2326 | E AREA | R2323 | R2324 |
| 3) | × | × | ○ | × | × | × | × | × | ○ | ○ | × | × | × | × | × | × | × | × | × | ○ | × | ○ | × | ○ | ○ | × | × | × | × | × | 0Ω | 1K |
| | × | × | × | ○ | ○ | × | ○ | × | × | × | ○ | ○ | ○ | ○ | ○ | × | ○ | ○ | ○ | ○ | × | ○ | × | × | ○ | ○ | ○ | × | × | ○ | 1K | 0Ω |

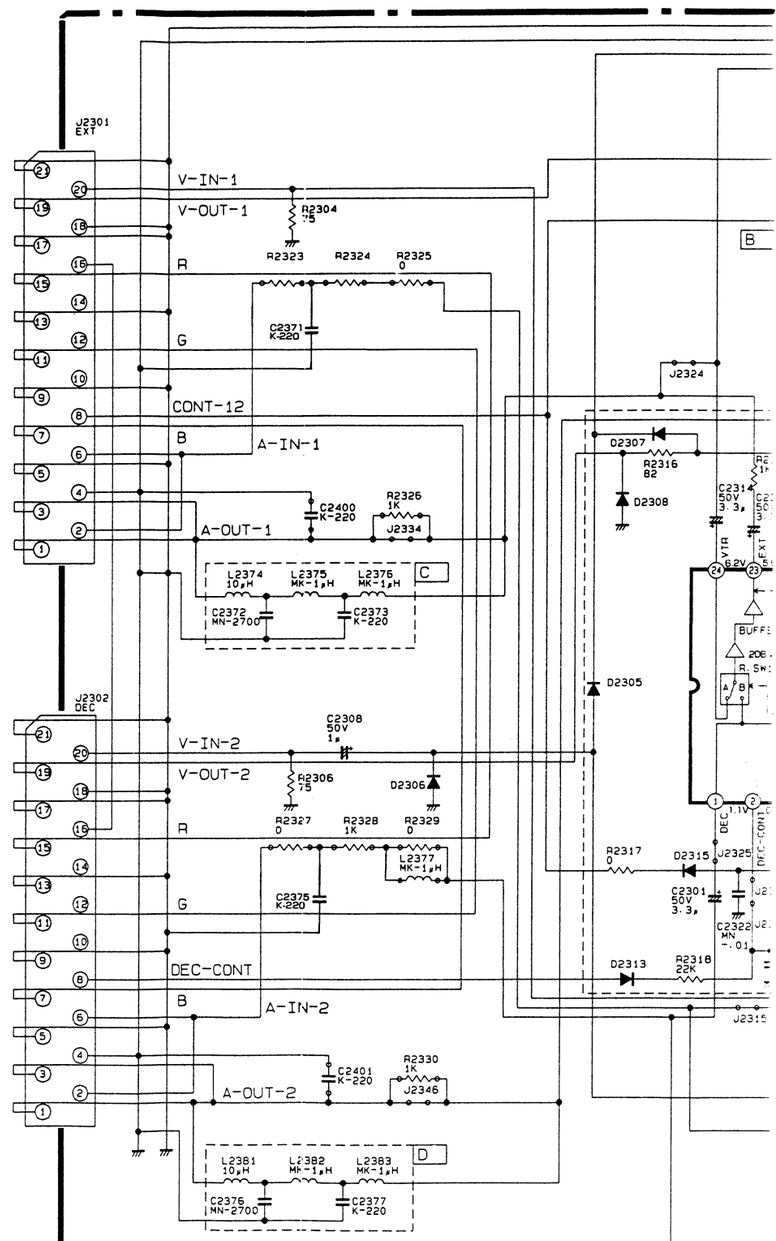
# (TUNER/VIF) ⚠PCB-MAIN




1SS131 UNLESS OTHERWISE SPECIFIED.

○ : Employed ✕ : Not employed

| SYMBOL \ MODEL / ADDRESS | | (Y) | (B) | (E) | (IR) | (G) | (A) | (NZ) | (SA) |
|---|---|---|---|---|---|---|---|---|---|
| A AREA | e-5 | ○ | ✕ | ○ | ✕ | ○ | ✕ | ✕ | ✕ |
| B AREA | c-6 | ○ | ✕ | ○ | ○ | ○ | ○ | ○ | ○ |
| C AREA | a-1 | ✕ | ✕ | ✕ | ✕ | ✕ | ○ | ○ | ✕ |
| E AREA | d-4 | ○ | ✕ | ✕ | ✕ | ○ | ✕ | ✕ | ○ |
| C103 | f-7 | ✕ | ✕ | ✕ | ✕ | ✕ | ○ | ○ | ✕ |
| C119 | d-7 | 18SL | 15SL | 18SL | 39SL | 18SL | 15SL | 12SL | 18SL |
| C133 | f-5 | ○ | ✕ | ○ | ✕ | ○ | ✕ | ✕ | ○ |
| D101 | d-2 | ○ | ✕ | ○ | ✕ | ○ | ✕ | ✕ | ✕ |
| D103 | b-2 | ✕ | ✕ | ✕ | ✕ | ✕ | ✕ | ✕ | ○ |
| | | | | | | | | | |
| D105 | b-2 | ✕ | ✕ | ✕ | ✕ | ✕ | ✕ | ✕ | ○ |
| L102 | f-7 | 1.2μ | 1.2μ | 1.2μ | 1.2μ | 1.2μ | 1.2μ | 2.2μ | 1.2μ |
| L107 | d-7 | 39μ | 56μ | 39μ | 27μ | 39μ | 47μ | 39μ | 47μ |
| L109 | c-8 | J-5.6μH | J-8.2μH | J-5.6μH | J-5.6μH | J-5.6μH | J-5.6μH | J-5.6μH | J-5.6μH |
| Q106 | e-3 | ○ | ✕ | ○ | ✕ | ○ | ✕ | ✕ | ○ |
| Q111 | e-6 | ○ | ✕ | ○ | ✕ | ○ | ✕ | ✕ | ✕ |
| R04 | b-7 | ✕ | ○ | ✕ | ✕ | ✕ | ○ | ○ | ○ |
| R105 | f-6 | ✕ | ✕ | ✕ | ✕ | ✕ | ○ | ○ | ✕ |
| R118 | c-8 | F-150 | F-390 | F-150 | F-270 | F-150 | F-180 | F-220 | F-200 |
| R198 | b-2 | ○ | ○ | ○ | ○ | ○ | ✕ | ✕ | ○ |
| R199 | d-3 | ○ | ✕ | ○ | ✕ | ○ | ✕ | ✕ | ○ |
| RJ101 | e-4 | ✕ | ○ | ○ | ○ | ✕ | ○ | ○ | ✕ |
| RJ102 | d-8 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| RJ106 | a-3 | ○ | ○ | ○ | ○ | ○ | ✕ | ✕ | ○ |
| RJ107 | a-3 | ✕ | ✕ | ✕ | ✕ | ✕ | ○ | ○ | ✕ |
| S101 | a-3 | ○ | ○ | ○ | ○ | ○ | ✕ | ✕ | ○ |

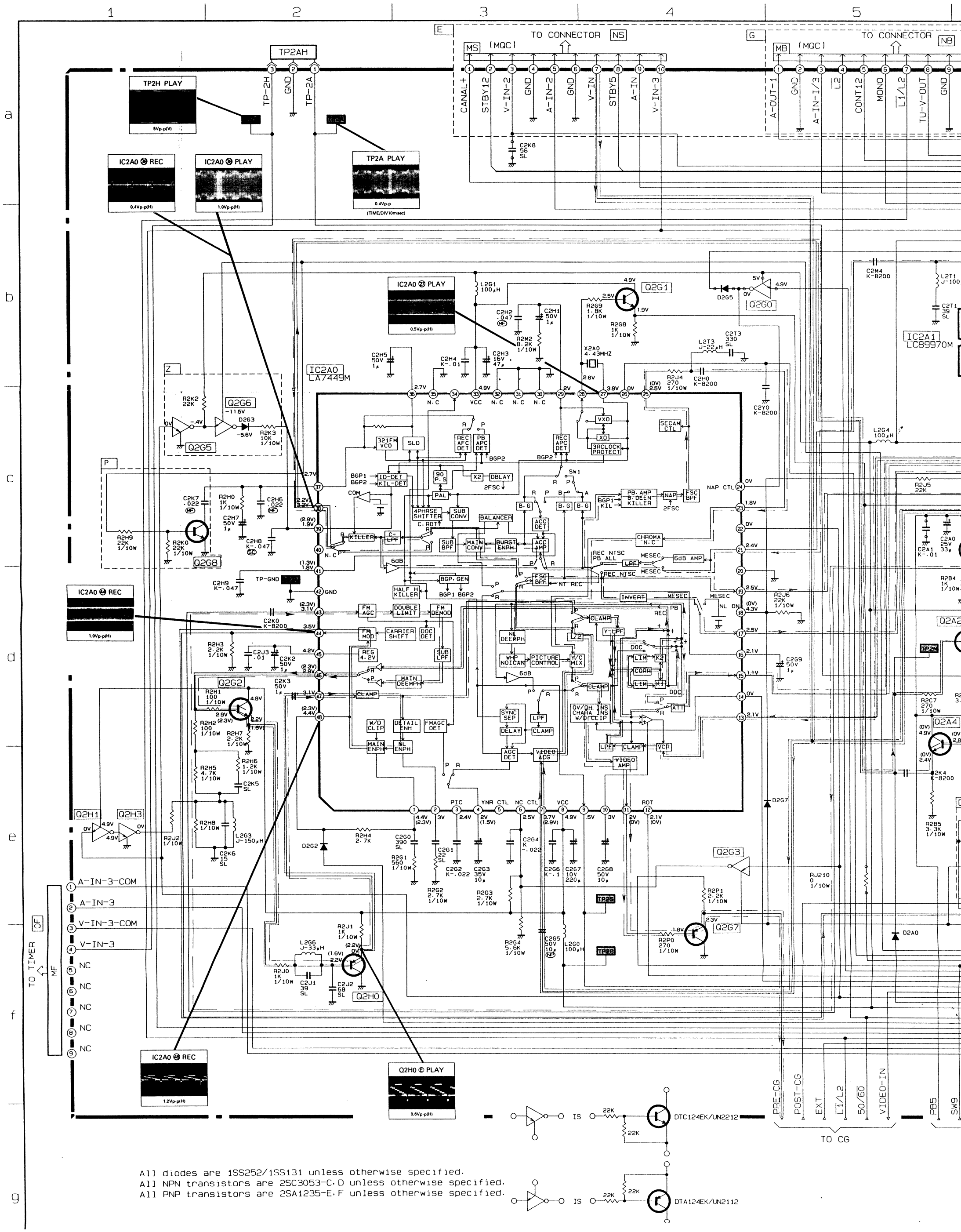



○ :Employed

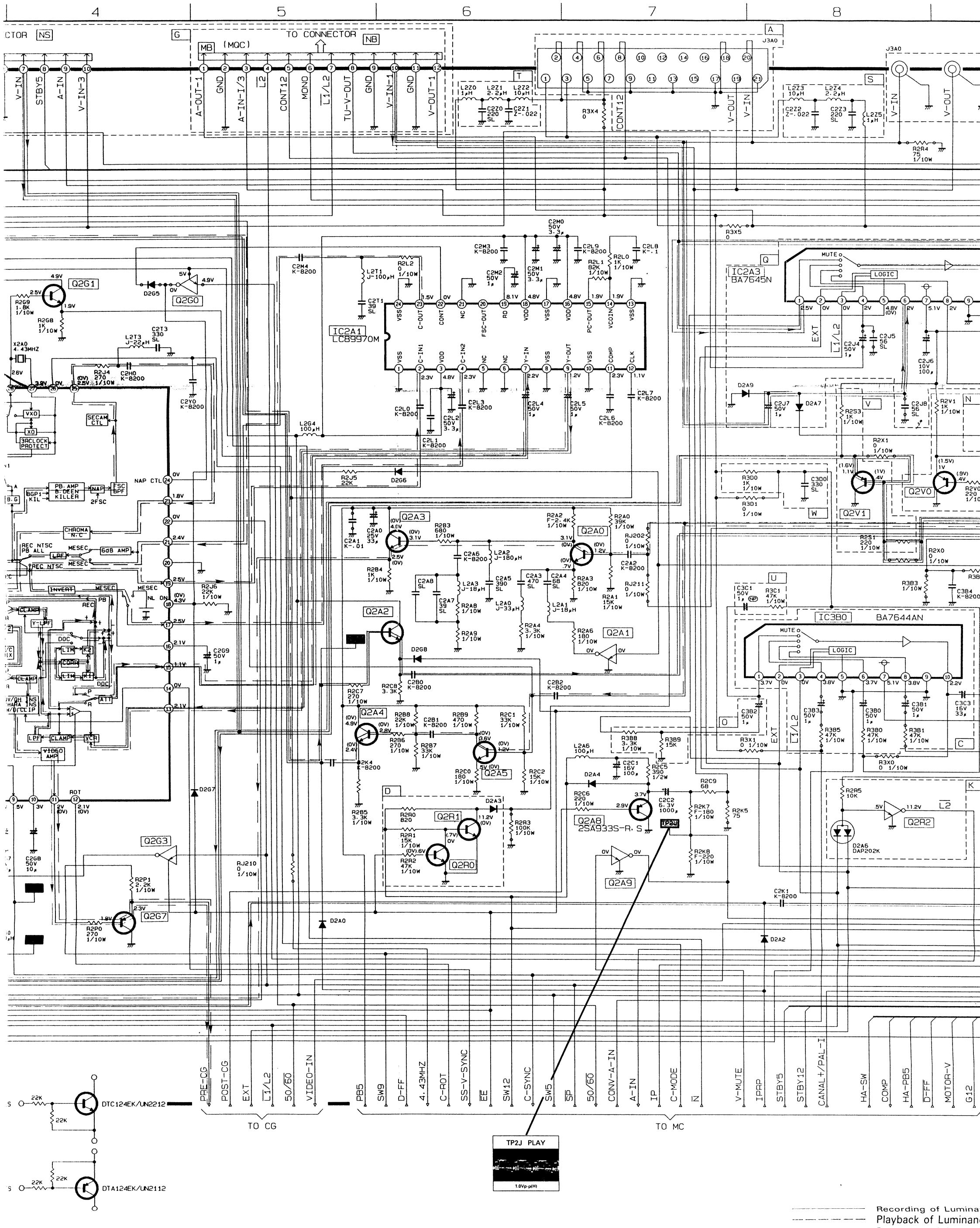
✕ :Not Employed

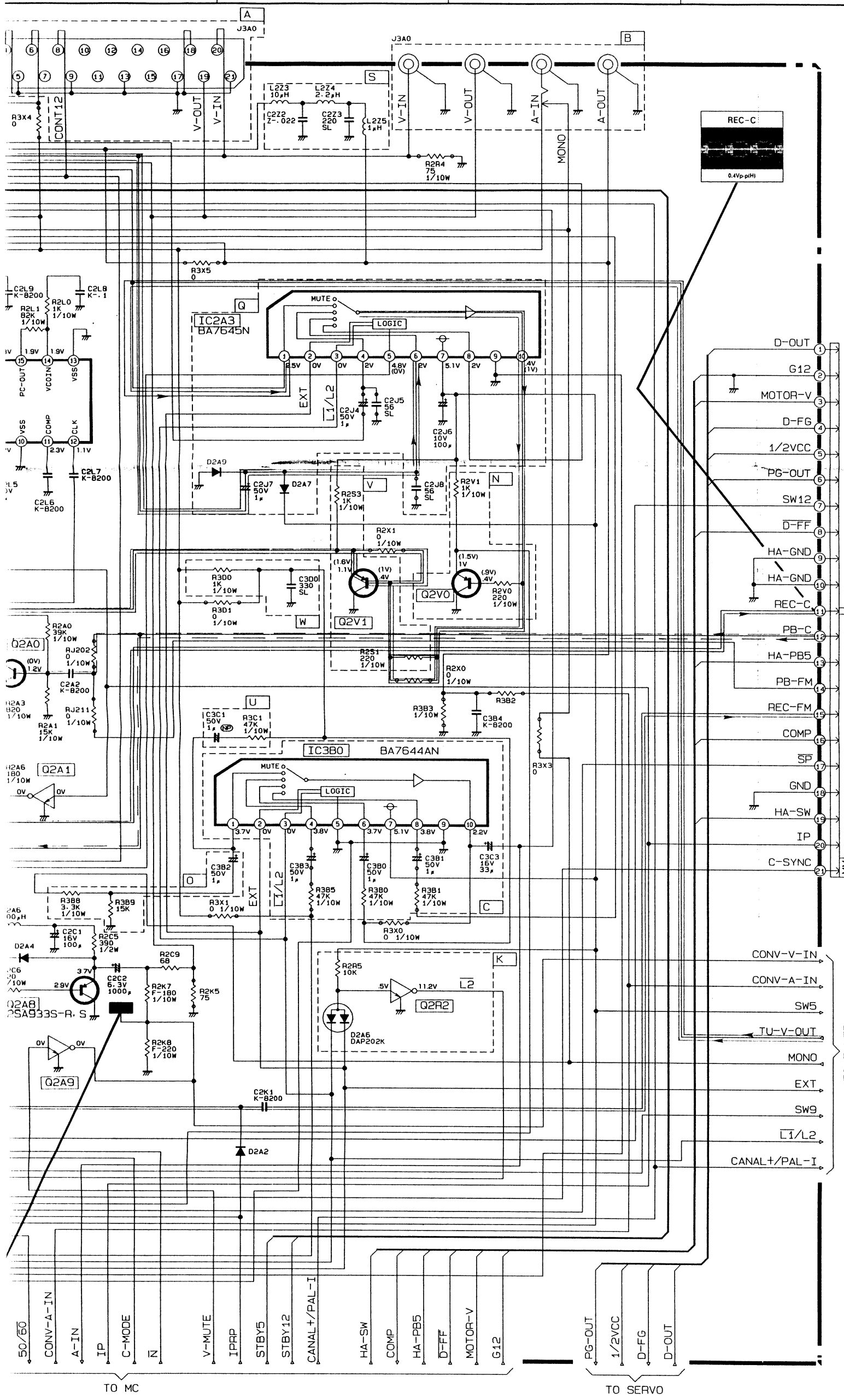
All diodes are 1SS252/1SS1310M unless otherwise spe

| ADDRESS | e-4 | e-5 | a-7 | d~f, 7~9 | c-4 | d-2 | b-10 | f-3 | b-4 | b-3 | c-7 | c |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SYMBOL / MODEL | J2315 | J2312 | J2336 | A AREA | B AREA | C AREA | J2345 | D AREA | J2324 | J2321 | J2333 | J2 |
| HS-541V(B)/(E)/(IR) | ✕ | ✕ | ○ | ✕ | ✕ | ✕ | ✕ | ✕ | ○ | ○ | ✕ | |
| HS-541V(G)/(Y) | ✕ | ✕ | ✕ | ○ | ○ | ✕ | ○ | ✕ | ✕ | ✕ | ○ | |




All diodes are 1SS252/1SS131 unless otherwise specified.
All NPN transistors are 2SC3053-C,D unless otherwise specified.
All PNP transistors are 2SA1235-E,F unless otherwise specified.


4
5
6
7
8
CTOR NS
G
TO CONNECTOR
MB
(MQC)
NB
A
J3A0
V-IN
STBY5
A-IN
V-IN-3
A-OUT-1
GND
A-IN-1/3
L2
CONT12
MONO
L1/L2
TU-V-OUT
GND
V-IN-1
GND
V-OUT-1
T
L2Z0 1μH
L2Z1 2.2μH
L2Z2 10μH
C2Z0 220 SL
C2Z1 Z-.022
R3X4 0
CONT12
V-OUT
V-IN
S
L2Z3 10μH
L2Z4 2.2μH
C2Z2 Z-.022
C2Z3 220 SL
L2Z5 1μH
V-IN
V-OUT
R2R4 75 1/10W
R3X5 0
Q
IC2A3 BA7645N
MUTE
LOGIC
EXT
L1/L2
C2J4 50V 1μ
C2J5 56 SL
C2J6 10V 100μ
D2A9
C2J7 50V 1μ
D2A7
V
R2S3 1K 1/10W
C2J8 56 SL
R2V1 1K 1/10W
N
R2X1 0 1/10W
R3D0 1K 1/10W
C3D0 330 SL
R3D1 0 1/10W
W
Q2V1
Q2V0
R2S1 220 1/10W
R2X0 0 1/10W
R3B3 1/10W
C3B4 K-8200
U
C3C1 50V 1μ NP
R3C1 47K 1/10W
IC3B0 BA7644AN
MUTE
LOGIC
C3B2 50V 1μ
C3B3 50V 1μ
C3B0 50V 1μ
C3B1 50V 1μ
C3C3 16V 33μ
O
EXT
L1/L2
R3X1 0 1/10W
R3B5 47K 1/10W
R3B0 47K 1/10W
R3B1 47K 1/10W
R3X0 0 1/10W
C
C2M0 50V 3.3μ
C2M3 K-8200
C2M2 50V 1μ
C2M1 50V 3.3μ
C2L9 K-8200
C2L8 K-.1
R2L1 82K 1/10W
R2L0 1K 1/10W
C2M4 K-8200
L2T1 J-100μH
R2L2 0 1/10W
C2T1 39 SL
IC2A1 LC89970M
VSS C-OUT CONT NC FSC-OUT RD VDD VSS VDD PC-OUT VCOIN VSS
VSS C-IN1 VDD C-IN2 NC NC Y-IN VSS Y-OUT VSS COMP CLK
C2L0 K-8200
C2L1 K-8200
C2L2 50V 3.3μ
C2L3 K-8200
C2L4 50V 1μ
C2L5 50V 1μ
C2L6 K-8200
C2L7 K-8200
L2G4 100μH
R2J5 22K
D2G6
4.9V
Q2G1
2.5V
R2G9 1.8K 1/10W
1.9V
R2G8 1K 1/10W
D2G5
5V
0V
4.9V
Q2G0
X2A0 4.43MHZ
2.6V
3.9V
0V
L2T3 J-22μH
C2T3 330 SL
R2J4 270 1/10W
C2H0 K-8200
C2Y0 K-8200
VXO
XO
3RCLOCK PROTECT
SECAM CTL
NAP CTL
PB. AMP B. DEEN KILLER
NAP
FSC BPF
2FSC
BGP1 KIL
B. G
CHROMA N. C
REC NTSC PB ALL
MESEC
LPF
6dB AMP
REC NTSC
MESEC
INVERT
MESEC
NL ON
R2J6 22K 1/10W
PB
REC
CLAMP
Y-LPF
DOC
LIM
K2
CORR
LIM
K1
DOC
CLAMP
P
R
ATT
LPF
CLAMP
VCR
VIDEO AMP
C2G9 50V 1μ
D2G7
ROT
5V
3V
2V (0V)
2.1V (0V)
C2G8 50V 10μ
Q2G3
R2P1 2.2K 1/10W
2.3V
Q2G7
1.8V
R2P0 270 1/10W
RJ210 0 1/10W
D2A0
Q2A3
Q2A0
Q2A2
Q2A1
Q2A4
Q2A5
R2A2 F-2.4K 1/10W
R2A0 39K 1/10W
RJ202 0 1/10W
RJ211 0 1/10W
C2A2 K-8200
C2A0 25V 33μ
C2A1 K-.01
R2B3 680 1/10W
R2B4 1K 1/10W
C2A6 K-8200
L2A2 J-180μH
C2A8 SL
C2A7 39 SL
L2A3 J-18μH
R2A8 1/10W
R2A9 1/10W
C2A5 390 SL
C2A3 470 SL
C2A4 68 SL
L2A0 J-33μH
L2A1 J-18μH
R2A3 820 1/10W
R2A4 3.3K 1/10W
R2A1 15K 1/10W
R2A6 180 1/10W
D2G8
C2B0 K-8200
C2B2 K-8200
R2C7 270 1/10W
R2C8 3.3K
R2B8 22K 1/10W
C2B1 K-8200
R2B9 470 1/10W
R2C1 33K 1/10W
R2B6 270 1/10W
R2B7 33K 1/10W
R2C0 180 1/10W
R2C2 15K 1/10W
2K4 K-8200
R2B5 3.3K 1/10W
D
R2R0 820
R2R1 15K 1/10W
R2R2 47K 1/10W
Q2R1
Q2R0
D2A3
R2R3 100K 1/10W
L2A6 100μH
R3B8 3.3K 1/10W
R3B9 15K
C2C1 16V 100μ
R2C5 390 1/2W
D2A4
R2C6 220 1/10W
R2C9 68
C2C2 6.3V 1000μ
R2K7 F-180 1/10W
R2K5 75
Q2A8 2SA933S-R, S
TP2J
R2K8 F-220 1/10W
Q2A9
C2K1 K-8200
D2A2
R2R5 10K
D2A6 DAP202K
Q2R2
L2
11.2V
.5V
PRE-CG
POST-CG
EXT
L1/L2
50/60
VIDEO-IN
PB5
SW9
D-FF
4.43MHZ
C-ROT
SS-V-SYNC
EE
SW12
C-SYNC
SW5
SP
50/60
CONV-A-IN
A-IN
IP
C-MODE
N
V-MUTE
IPRP
STBY5
STBY12
CANAL+/PAL-I
HA-SW
COMP
HA-PB5
D-FF
MOTOR-V
G12
TO CG
TO MC
TP2J PLAY
1.0Vp-p(H)
22K
DTC124EK/UN2212
22K
22K
DTA124EK/UN2112
22K
Recording of Lumina
Playback of Luminan
Recording of Color S
Playback of Color Sig

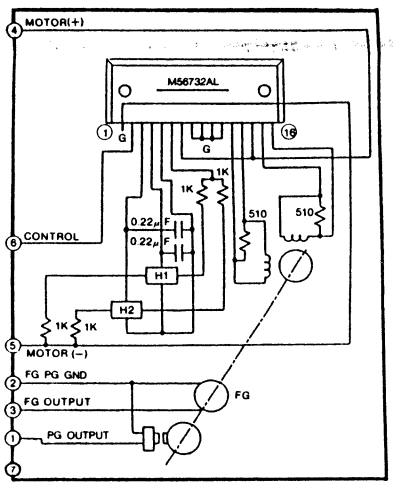



## (Y/C) ⚠ PCB-MAIN

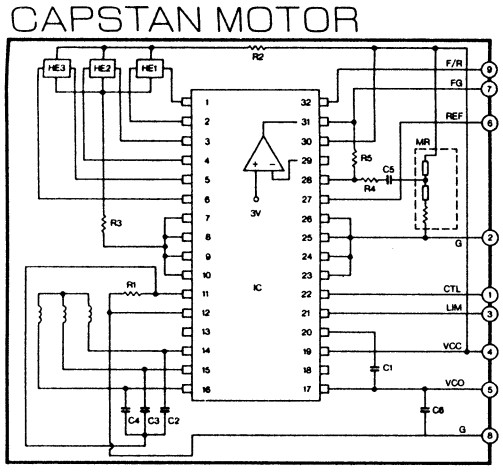
| SYMBOL (ADDRESS) \ MODEL | (Y) | (B) | (E) | (IR) | (G) | (A) (NZ) | (EE) | (SA) | (HD) |
|---|---|---|---|---|---|---|---|---|---|
| Z (c-2) | X | ○ | X | X | X | X | X | X | X |
| B (a-8, 9) | X | X | X | X | X | ○ | X | X | ○ |
| A (a-6, 7) | X | X | X | X | X | X | ○ | X | X |
| G (a-5, 6) | X | X | X | X | X | X | X | ○ | X |
| E (a-3-6) | ○ | ○ | ○ | ○ | ○ | X | X | X | X |
| K (e-8) | ○ | X | X | X | ○ | X | X | X | X |
| D (e-6) | X | ○ | ○ | ○ | X | X | ○ | X | X |
| O (e-7) | X | ○ | ○ | ○ | X | ○ | ○ | X | ○ |
| U (d-7) | X | X | X | X | X | X | X | ○ | X |
| C (d-8) | X | ○ | ○ | ○ | X | ○ | ○ | ○ | ○ |
| P (c-1) | X | X | X | X | X | X | X | X | X |
| Q (b-8) | X | ○ | ○ | ○ | X | ○ | ○ | ○ | ○ |
| N (c-8, 9) | X | ○ | ○ | ○ | ○ | X | ○ | X | X |
| S (a-8) | X | X | X | X | X | X | X | X | X |
| T (a-6) | X | X | X | X | X | X | X | X | X |
| V (c-8) | X | ○ | ○ | ○ | X | ○ | ○ | ○ | ○ |
| W (c-7, 8) | X | X | X | X | X | ○ | ○ | X | X |
| R2K5 (e-7) | ○ | X | X | X | ○ | X | X | X | X |
| R2X0 (d-8) | X | X | X | X | ○ | X | X | X | X |
| R2X1 (c-8) | X | X | X | X | ○ | X | X | X | X |
| R3X0 (e-8) | X | X | X | X | X | X | X | X | X |
| R3X1 (c-7) | ○ | X | X | X | ○ | X | X | X | X |
| R3X3 (d-9) | ○ | X | X | X | ○ | X | X | ○ | X |
| R3X4 (a-7) | X | X | X | X | X | ○ | ○ | X | X |
| R3X5 (b-7) | X | X | X | X | X | ○ | ○ | X | X |
| D2G5 (b-4) | ○ | X | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Q2G0 (b-4) | ○ | X | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| R2R4 (a-8) | X | X | X | X | X | ○ | ○ | ○ | ○ |
| C2J4 (b-8) | X | ○ | ○ | ○ | X | ○ | ○ | ○ | ○ |
| C2J5 (b-8) | X | X | X | X | X | X | X | X | X |
| C2J8 (c-8) | X | ○ | ○ | ○ | X | X | X | X | X |
| C2K8 (a-3) | X | ○ | ○ | ○ | X | X | X | X | X |
| C3B3 (d-8) | X | ○ | ○ | ○ | X | ○ | ○ | ○ | ○ |
| R3B5 (e-8) | X | ○ | ○ | ○ | X | ○ | ○ | ○ | ○ |
| C3B1 (d-8) | X | ○ | ○ | ○ | X | X | X | X | X |
| R3B1 (e-8) | X | ○ | ○ | ○ | X | X | X | X | X |
| R2R3 (e-6) | ○ | ○ | ○ | ○ | ○ | X | ○ | X | X |
| R3D1 (c-7) | X | ○ | ○ | ○ | X | X | X | X | X |
| R3B2 (d-9) | 1.2K | 0Ω | ← | ← | 1.2K | 0Ω | ← | ← | ← |
| R3B3 (d-8) | 4.7K | ← | ← | ← | ← | ← | ← | ← | ← |
| D2A4 (e-6) | X | ○ | ○ | ○ | X | ○ | ○ | ○ | ○ |
| RJ210 (e-5) | X | X | X | X | X | ○ | ○ | ○ | ○ |
| RJ202 (c-7) | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| RJ211 (c-7) | X | X | X | X | X | X | X | X | X |
| C2A1 (c-5) | ○ | X | X | X | ○ | X | X | X | X |
| C2K5 (e-2) | 180 | 220 | 180 | 220 | 180 | ← | ← | 220 | 220 |
| R2A8 (d-6) | 270 | 300-F | 270 | 300-F | 270 | ← | ← | 300-F | ← |
| R2A9 (d-6) | 270 | 150 | 270 | 150 | 270 | ← | ← | 150 | ← |
| R2H8 (e-1) | 180 | 270 | 180 | 270 | 180 | ← | ← | 270 | ← |
| R2J2 (e-1) | 180 | ○ | 180 | ○ | 180 | ← | ← | ○ | ← |
| C2A8 (d-6) | 33 | 18 | 33 | 18 | 33 | ← | ← | 18 | ← |

Recording of Luminance Signal
Playback of Luminance Signal
Recording of Color Signal
Playback of Color Signal

## DRUM MOTOR




## CAPSTAN MOTOR



# ⚠PCB-HEAD AM

TP2XY: 1 N.C, 2 N.C, 3 GND, 4 TP-2Y, 5 TP-2X

GP: 1 FE, 2 FE-G, 3 GND

R227 0 1/10W
C222 K-8200
TP2N
L205 J-15μH
C277 82 SL
R228 1K 1/10W
R212 22K 1/10W
R216 F-1K 1/10W
R217 1K 1/10W
C217 82 SL
L204 J-150μH
C219 K-8200
R213 100 1/10W
R215 F-1.6K 1/10W
L203 J-82μH
C218 180 SL
R210 1.2K 1/10W
R211 22K 1/10W
R214 1.8K 1/10W
Q208 (2.3V, 1.7V, 5V)
Q207 (2.3V, 1.7V)

C220 K-.047
L201 100μH
C211 6.3V 47μ
C212 B200
R220 F-9.1K 1/10W
L202 J-22μH
C213 68 CH
R205 390K 1/10W
R200 4.7K 1/10W
C214 K-.1

9V (2.4V) 7V (3.8V) 2.5V (4.2V) 2.9V 4.8V (3.9V) 2.6V .4V 0~4.6V (0V) 4.8V 2.8V 4.9V
22 21 20 19 18 17 16 15 14 13

DET, AGC, RF, PEAK, ENVE, LOGIC, COMP, MUTE, VCC, REC
ENVE, ENVE, AGC, SP, EP, L, H
PRE PRE PRE PRE PRE PRE
DET

3 4 5 6 7 8 9 10 11 12
1.2V .7V (2.2V) 0V (2.4V) .7V (2.5V) .7V (2.4V) 0V (2.4V) .7V (2.4V) 0V 5V (0V)

C210 K-.1
R218 F-30K 1/10W
5V (0V)
REC2
0V (4.9V)
Q201

C202 Z-1μ C203 Z-1μ C206 Z-1μ C207 Z-1μ
C204 39 SL C205 39 SL C208 47 SL C209 47 SL
A B

LP-L
LP-R
SP-R
SP-L

R283 0
R282 0
R204 10
R284 0
R281 0

R272 F-120K 1/10W
R279 F-10K 1/10W
R278 F-10K 1/10W
R277 F-10K 1/10W
Q260 (0V, 4.8V)
R273 F-22K 1/10W
Q261 (4.4V, 0V)
R274 F-56K 1/10W
Q262 (0V, 5V)
C275 16V MN-.01

TP54 TP55 TP57 TP56 TP53
TP45 TP44 TP43 TP42 TP41 TP40 TP9 TP10 TP11 TP12 TP13 TP14
C276 K-1000
R285 0
R280 0

P2 COM P3 P1 P0 D-OUT G12 MOTOR-V D-FG 1/2VCC PG-OUT SP-R SP-COM SP-L LP-R LP-COM LP-L N.C N.C N.C
5 4 3 2 1 6 5 4 3 2 1 1 2 3 4 5 6 7 8 9
SW570 GA GB

TO DECK (SW570)
P0 P1 P3 COM P2
DRUM MOTOR
D-MOTOR
M570

TO DRUM

R334 1K 1/10W
D301
R340 18K 1/10W
R330 18K 1/10W
R328 0 1/10W
R329 10K
C337 50V 1μ
E
L31 J-8
R331 27K 1/10W
C333 50V 10μ
C326 16V 47μ
C338 K-8200
C325 50V 1μ

(4.1V) 0V 0V 8.7V 11.6V (0V) 4.2V 0V 0V
2 4 6 8 10 12 14 16 18 20

REC/PB CONT
RIPPLE FILTER
PB/EE CONT
MUTING CONT
EP. SW CONT
LP. SW CONT
POWER ON/OFF MUTE
REC EE PB

R332 15K 1/10W
C327 16V 33μ
L310 J-1mH
T310 7057200440
C328 K-560
VR310 B-100K
(.3V) (10.4V)
3V -.5V
Q310 2SC3331-S, T, U
C329 100V .039 PB
C331 Z-.01
C330 1000

EE PB
REC CURRENT PROTECTOR
RIPPLE FILTER
EQ AMP
1 3 5 7 9 11 13 15 17 19
3V (10.7V) 0V (7.6V) 0V 0V 2.2V 2.2V
C310 K-B200
C345
R314 330K
C312 50V C-1μ
C315 16V C-33μ TP
C314 .018
R311 33K 1/10W
C311 K-820
C
R312 270 1/10W
C313 50V 1μ
R310 10
R313 100 1/10W
IC310 LA7295
R3A2 10K 1/10W 2.3V
Q3A0 2SC3052

TP59 TP58 TP49 TP48 TP47 TP46
CTL- CTL+ GND A-E A-REC A-PB TP3E N.C TP3F
1 2 3 4 5 6 1 2 3
GN TP3EF

TO AC HEAD
6 5 4 3 2 1
R/P AE CTL
T370

All dio
All NPN
All PNP

# ⚠PCB-HEAD AMP (HA-AUDIO)

←: Means same as left side
○: Employed　　×: Not employed

| SYMBOL \ MODEL / ADDRESS | | (B)/(Y) (IR) | (A)/(NZ) (E)/(G) | (SA) |
|---|---|---|---|---|
| R317 | d-9 | 27K | ← | ← |
| R320 | d-9 | 820 | ← | ← |
| C318 | e-9 | 5600 | ← | ← |
| R319 | d-9 | 5.6K | ← | ← |
| | | | | |
| R283 | e-4 | ○ | ○ | ○ |
| R284 | f-4 | ○ | ○ | ○ |
| R285 | f-4 | ○ | ○ | ○ |
| | | | | |
| C345 | d-8 | K-1000 | ← | × |
| | | | | |
| A AREA | d-3 | ○ | ○ | ○ |
| B AREA | d-3 | ○ | ○ | ○ |
| C AREA | d-8 | ○ | ○ | ○ |
| D AREA | b-9 | ○ | ○ | ○ |
| E AREA | b-8 | ○ | ○ | ○ |
| F AREA | d-2 | × | × | × |
| R280 | f-4 | × | × | × |
| R281 | e-4 | × | × | × |
| R282 | e-4 | × | × | × |
| R201 | d-2 | F-75K | ← | ← |
| R202 | d-2 | 10K 1/10W | 10K 1/10W | 10K 1/10W |
| R203 | d-2 | 27K 1/10W | 27K 1/10W | 27K 1/10W |
| R200 | b-3 | × | × | × |
| Q205 | d-2 | ○ | ○ | ○ |

All diodes are 1SS252/1SS1310M unless otherwise specified.
All NPN transistors are 2SC3053-C,D unless otherwise specified.
All PNP transistors are 2SA1235-E,F unless otherwise specified.

IS 22K 22K DTC124EK/UN2212

IS 22K 22K DTA124EK/UN2212

T370

# (MC) ⚠PCB-MAIN

TO PCB-TIMER TK

MK

RESET REMO STBY5 KEY3 KEY2 KEY1 KEY0 GND AC-2 AC-1 D9 D8 D7 D6 D5 D4 D3 D2 D1 D0 SI SH SG SF SE SD SC SB SA

TP5B

D582

Q5C3
2SC3052-F

IC5A2
TA7291S

IN2 VSS OUT 2 NC GND VS OUT 1 VPEF IN1

LM-1
LM-2
ML
M
LOADING MOTOR

IC5A0

HS-541V(B) ONLY

Q5A1 Q5A2 Q5A3

IC5A5
AT93C56
-10PC

IC5A1
CAT35C104P
/AT93C66
-10PC

Q5F0
2SA933S-R.S
/2SA1309A-R.S SW5

Q5F1

Q5B2 Q5C4 Q5C5 Q5B0 Q5A9 Q5B1 Q5D6

D-OUT

X5A1 8.388608MHz

TP5A TP5J5 TP5J7 TP5J1 TP5J2 TP5J4 TP5J3 TP5V TP5K0 TP5X

TO PCB-HEAD AMP GE

ME

CP-M-V G12 CP-FG1 F/R STBY5 CP-OUT P1-P3 PO GND REC-2 EE A-MUTE CONV-A-IN A-IN GND CTL+ CTL- GND SW5 CUE DTA-ENV-OUT

TO TUNER: ANT SW5 STBY5 A-MUTE TU-V BS1 BS2 NR45 AFT-V SW12

TO-CG/VPS: I2C-CLK I2C-DATA H-SYNC SW5 STBY5 V-SYNC CG-SCK RESET CG-CS CG-DATA

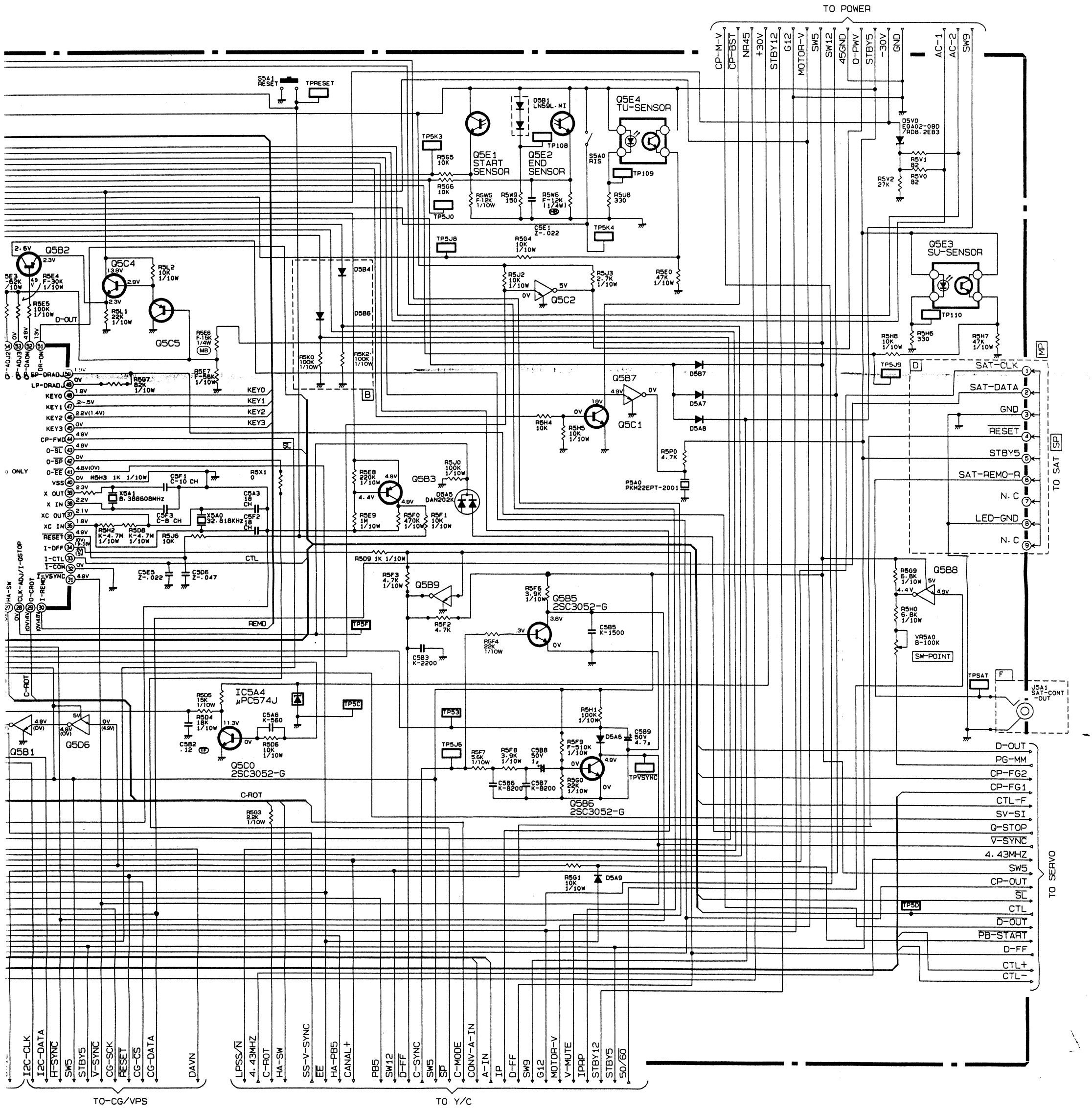
○ : Employed × : Not employed

| SYMBOL / MODEL / ADDRESS | R5F9 | C AREA | D AREA | F AREA | R5X0 | R5F3 | IC5A0 |
|---|---|---|---|---|---|---|---|
| | e-9 | e-1 | c-11 | d-11 | e-5 | d-8 | c-5 |
| HS-541V(Y) | × | × | × | × | × | × | M38185ME-116FP |
| HS-541V(SA) | × | × | × | × | × | × | M38185ME-116FP |
| HS-541V(B) | × | ○ | ○ | ○ | ○ | × | M38185ME-094FP |
| HS-541V(E) | × | × | × | × | ○ | × | M38185ME-116FP |
| HS-541V(G) | × | ○ | × | × | ○ | × | M38185ME-093FP |
| HS-541V(IR) | × | ○ | × | × | ○ | × | M38185ME-094FP |
| HS-541V(A) | ○ | × | × | × | × | × | M38185ME-116FP |
| HS-541V(NZ) | × | × | × | × | × | × | M38184MA-182FP |

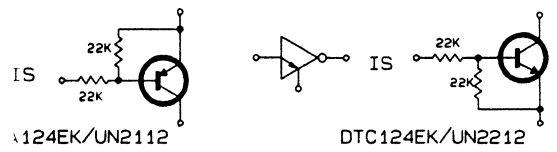
All diodes are 1SS252/1SS131 unless otherwi
All NPN transistors are 2SC3052-E.F unless
All PNP transistors are 2SA1235-E.F unless

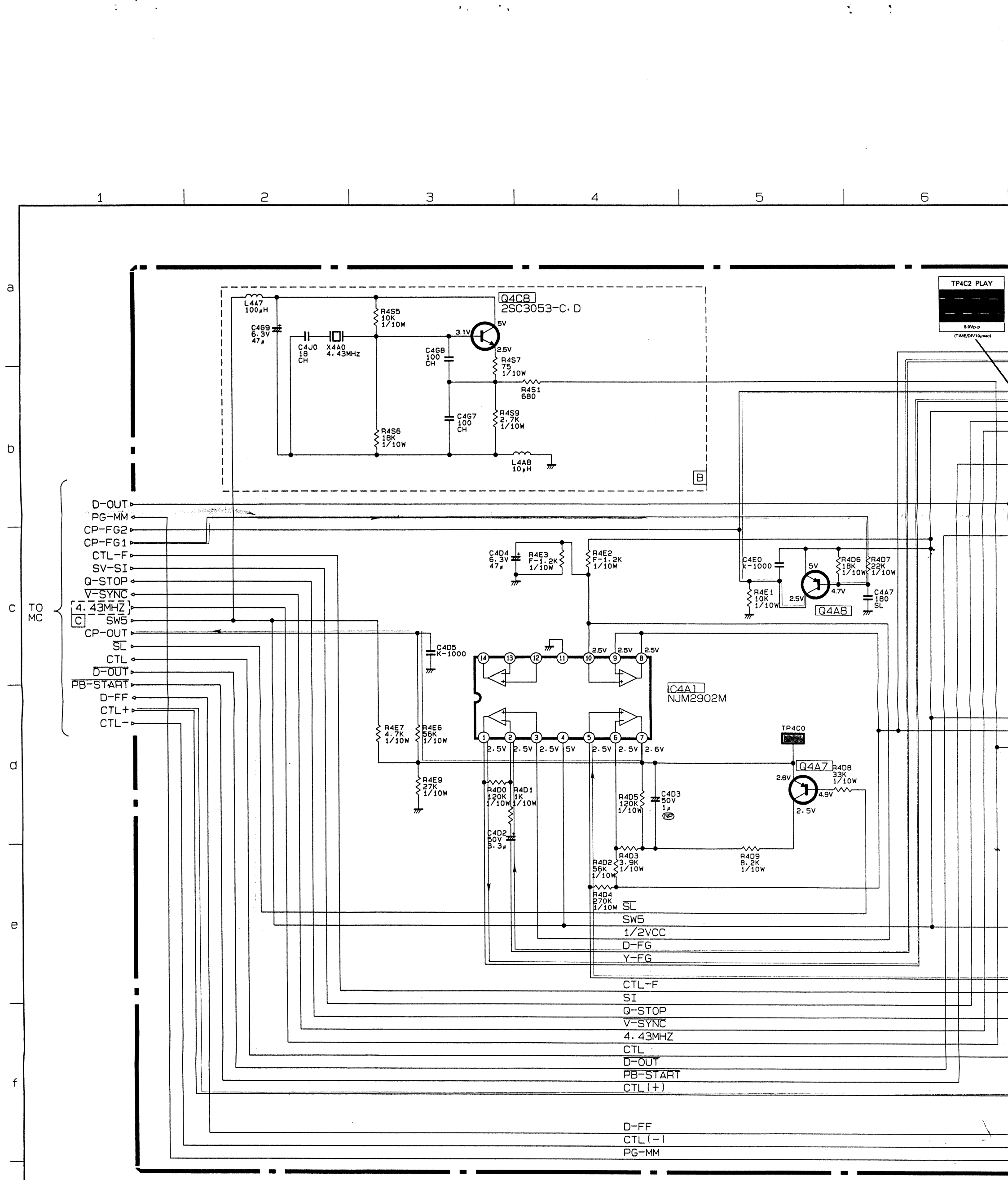
IS 22K 22K DTA124EK/UN2112

DTC




e 1SS252/1SS131 unless otherwise specified.
istors are 2SC3052-E.F unless otherwise specified.
istors are 2SA1235-E.F unless otherwise specified.






○ : Employed × : Not employed

| SYMBOL / MODEL | C4A6 | B AREA | C AREA | R4C4 | R4C5 | R4F3 | R4F1 |
|---|---|---|---|---|---|---|---|
| HS-541V(B)(E)(IR)(Y) | ○ | ○ | × | 1/10W | 1/10W | 1/10W | 1/4or1/6W |
| HS-541V(G) | ○ | ○ | × | 1/10W | 1/10W | 1/10W | 1/4or1/6W |
| HS-541V(A)(NZ)(SA) | × | × | ○ | 1/10W | 1/10W | 1/10W | 1/4or1/6W |

All NPN transistors are 2SC3052-E·F unless otherwise specified.
All PNP transistors are 2SA1235-E·F unless otherwise specified.

6 | 7 | 8 | 9 | 10 | 11

# (SERVO) ⚠PCB-MAIN

TO Y

D-OUT | PG-OUT | 1/2VCC | D-FG

TP4C2 PLAY — 5.0Vp-p (TIME/DIV10μsec)
TP4C1 PLAY — 5.0Vp-p (TIME/DIV10μsec)
TP4D1 PLAY — 5.0Vp-p (TIME/DIV10μsec)
TP4D2 PLAY — 5.0Vp-p(H)

TP4F1 PLAY — 5.0Vp-p(H) (TIME/DIV0.2msec)

IC4A0 MN67492 MSX5

IC4A0⑭PLAY — 0.8Vp-p(V)

IC4A0⑬PLAY — 2.5Vp-p (TIME/DIV0.5msec)

Q4A2 2SC3052-G
Q4A3 2SC3052-G
Q4A4 2SA1235-F
Q4A0

D4A1 1SS252 /1SS131
D4A0 DAN202K

TP4F1 TP4M1 TP4G1

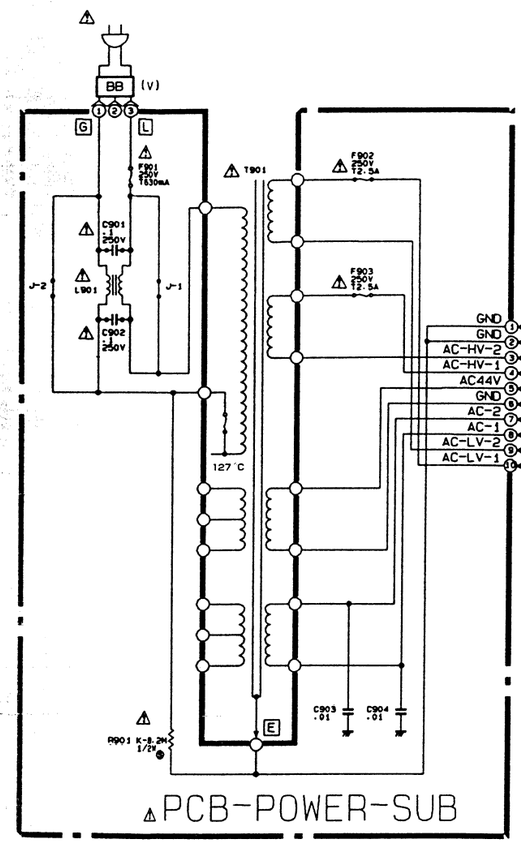
FSP/CDD PCTL RCK CP-APC CP-AFC D-AFC D-APC HSWA HSWV VSYNC SI CPFGIN VSS PGMM
VDD CTLAMP OUT GND CTLA CI CTLS RCTL1 RCTL2 TPZ CIF CIR VRI YFG YPG

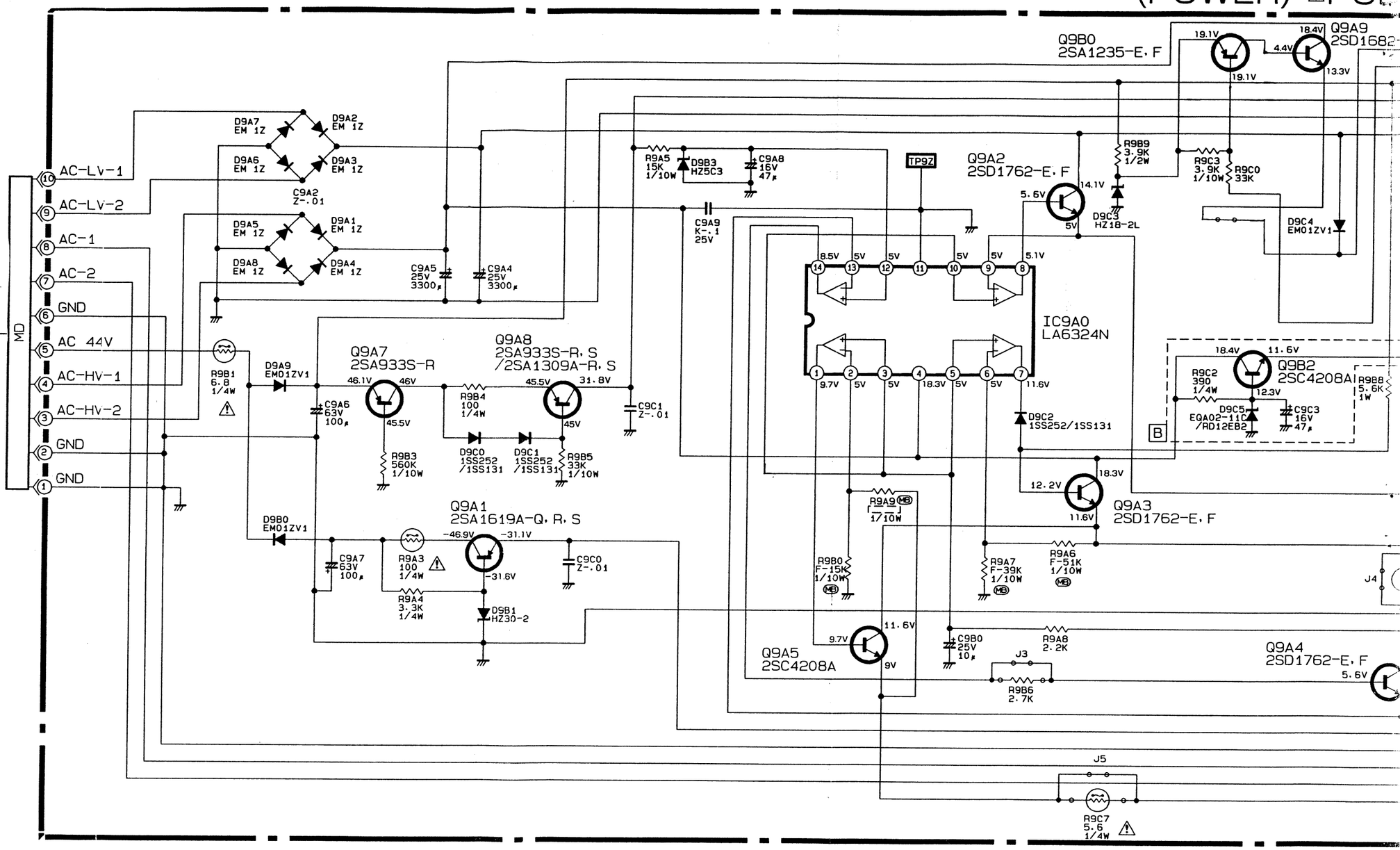
Drum Servo System
Capstan Servo System

ise specified.
ise specified.

9 10 11 12 13 14 15 16 17

(POWER) ⚠PCB

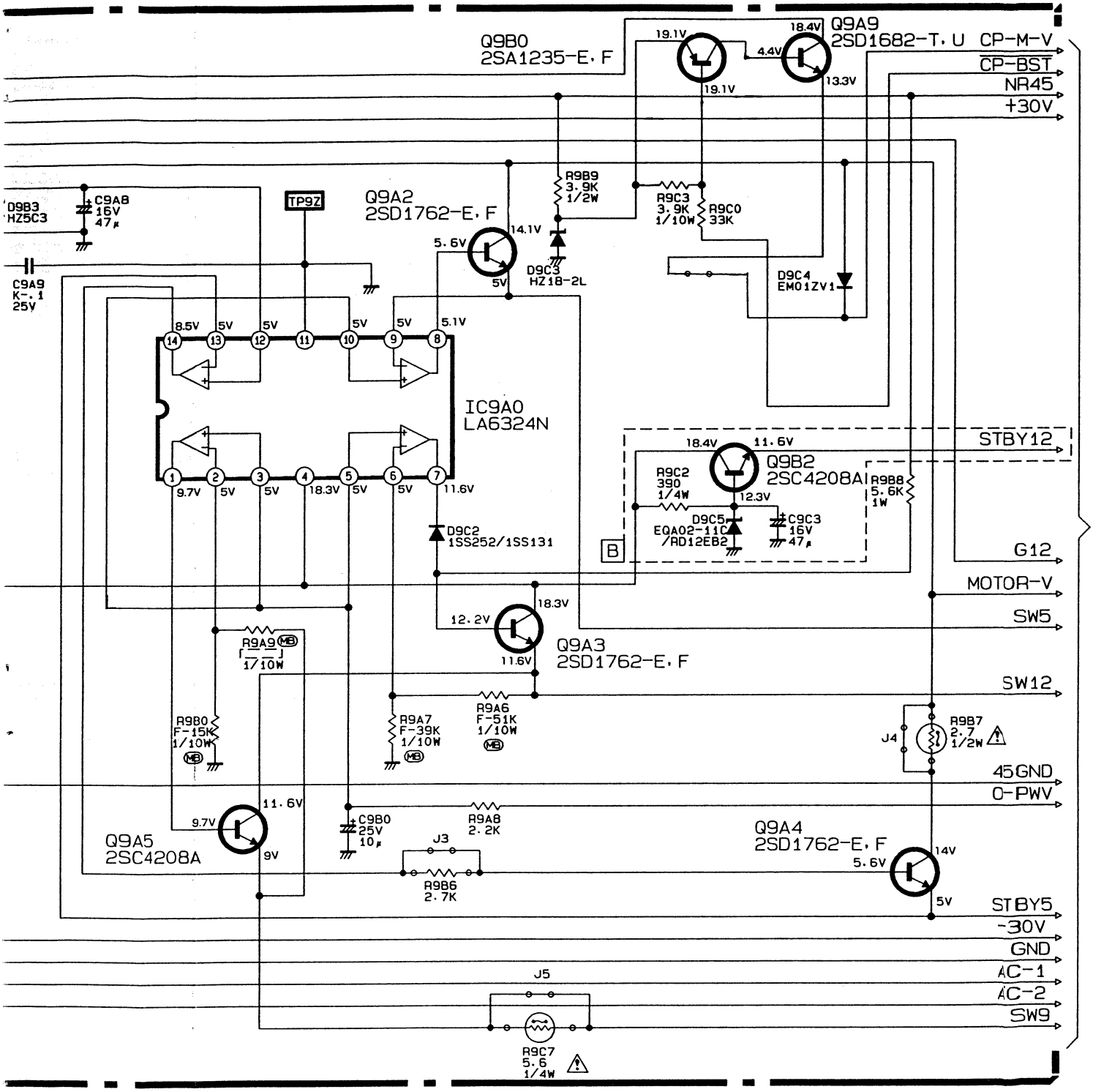


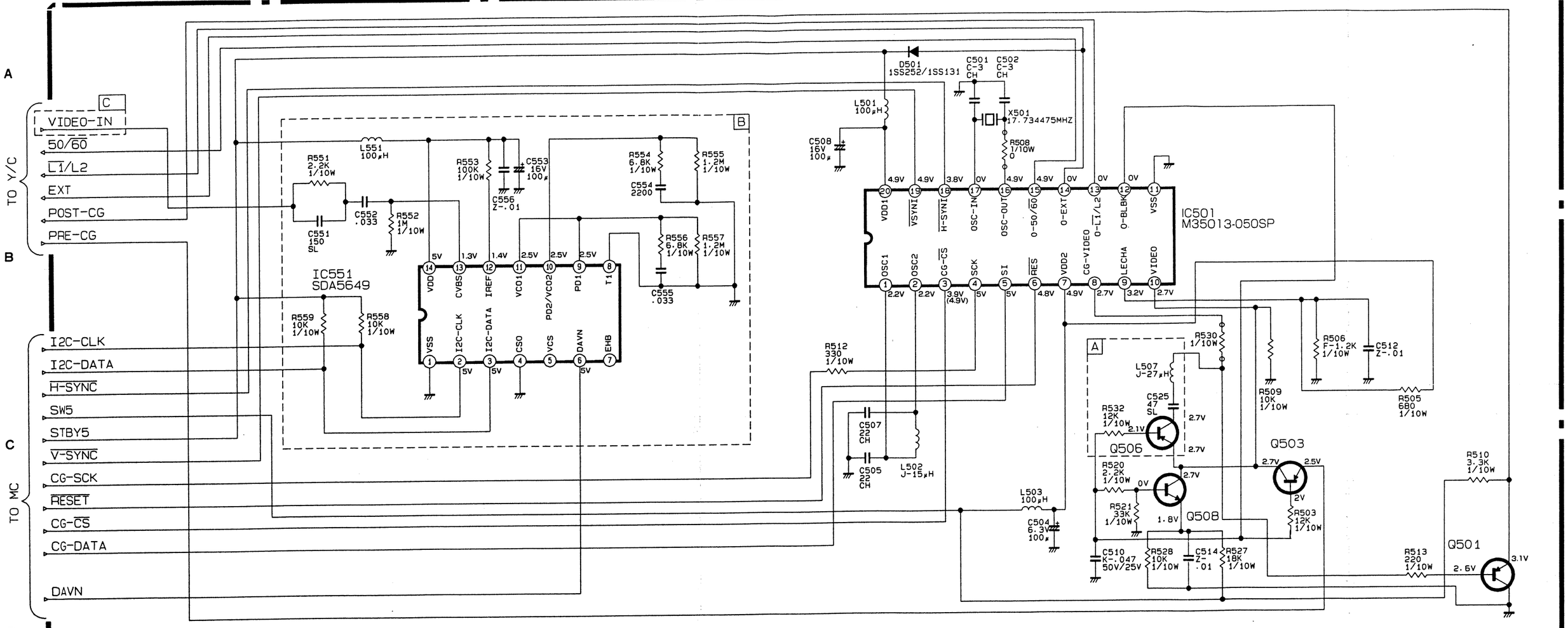

○ : EMPLOYED × : NO" EMPLOYED

| MODEL \ SYMBOL | R9B6 | J3 | R9B7 | J4 | B AREA | R9A9 | R9C7 | J5 | L901 | J-1,J-2 | C901/C902 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| HS-541V(G)/V(Y) | ○ | × | × | ○ | ○ | F-12K | × | ○ | ○ | × | × |
| HS-541V(B) | × | ○ | ○ | × | × | F-12K | × | ○ | ○ | × | × |
| HS-541V(E)/V(IR) | ○ | × | × | ○ | × | F-12K | × | ○ | ○ | × | × |
| HS-541V(A)/V(NZ)/V(SA) | ○ | × | × | ○ | × | F-12K | × | ○ | × | ○ | × |

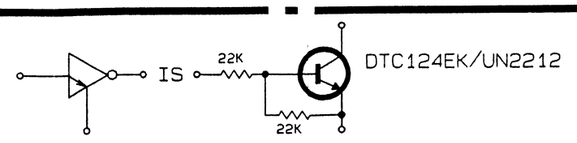
# (POWER) ⚠PCB-MAIN



# (CG/VPS) ⚠PCB-MAIN

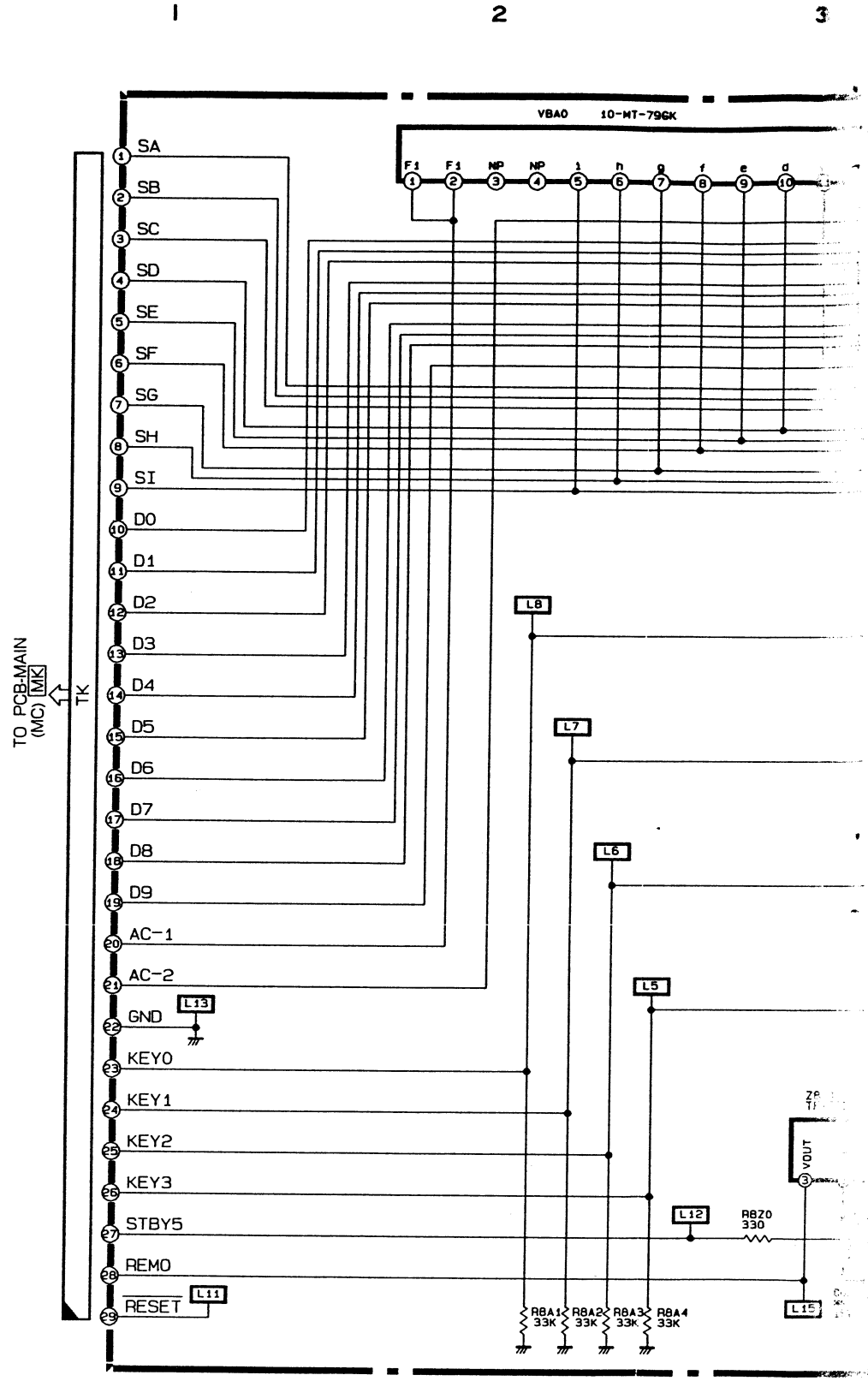



All NPN transistors are 2SC3052-E, F unless otherwise specified.
All PNP transistors are 2SA1235-E, F unless otherwise specified.




○ : Employed × : Not employed

| MODEL \ SYMBOL | A | B | C | R530 |
|---|---|---|---|---|
| HS-541V(Y) | ○ | × | × | 390 |
| HS-541V(A)/V(NZ)/V(SA) | × | × | × | 0Ω |
| HS-541V(B) | × | ○ | ○ | 0Ω |
| HS-541V(E)/V(G) | ○ | ○ | ○ | 390 |
| HS-541V(IR) | × | ○ | ○ | 0Ω |




○ Employ × Not employ

| SYMBOL / MODEL | D8J0 | D8J1 D8J2 | D8K0 | D8K1 | D8K2 | D8K |
|---|---|---|---|---|---|---|
| HS-541V(Y) | ○ | ○ | ○ | ○ | × | |
| HS-541V(B) | ○ | ○ | ○ | × | × | × |
| HS-541V(G) | ○ | ○ | × | ○ | × | |
| HS-541V(IR) | ○ | ○ | × | × | × | |
| HS-541V(E) | ○ | ○ | ○ | × | ○ | × |
| HS-541V(A) | ○ | ○ | × | × | × | |
| HS-541V(NZ) | ○ | ○ | × | × | × | |
| HS-541V(SA) | ○ | ○ | × | × | × | |

# ⚠PCB-TIMER

All diodes are 1SS252/1SS131
unless otherwise specified

FUNCTION SELECTOR MAP

| | D8J0 | D8K0 | D8L0 | D8M0 |
|---|---|---|---|---|
| Y.E.A.SA | HEAD1 | MESECAM | PDC | GEMSTAR |
| G | HEAD1 | — | — | GEMSTAR |
| B.IR | HEAD1 | U-ONLY | PDC | — |
| NZ | HEAD1 | — | — | — |
| EE | HEAD1 | — | VPS | GEMSTAR |

| | D8J1 | D8K1 | D8L1 | D8M1 |
|---|---|---|---|---|
| Y.E.A.SA | HEAD2 | C+ SCRT | CCIR | SHOWVIEW |
| G | HEAD2 | C+ SCRT | — | — |
| B.IR | HEAD2 | — | SAT-CONT | — |
| NZ | HEAD2 | — | — | — |
| EE | HEAD2 | — | — | — |

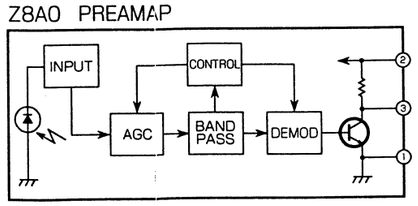
| | D8J2 | D8K2 | D8L2 | |
|---|---|---|---|---|
| Y.E.A.SA | JOG | 2 SCRT | JUST CLK | |
| G | JOG | 2 SCRT | A.S.U | |
| B.IR | JOG | — | — | |
| NZ | — | — | — | |
| EE | JOG | — | — | |

| | | D8K3 | D8L3 | |
|---|---|---|---|---|
| Y.E.A.SA | | ENGLISH | SIMPLE | |
| G | | ENGLISH | SIMPLE | |
| B.IR | | 3-BAND | — | |
| NZ | | — | — | |
| EE | | — | — | |

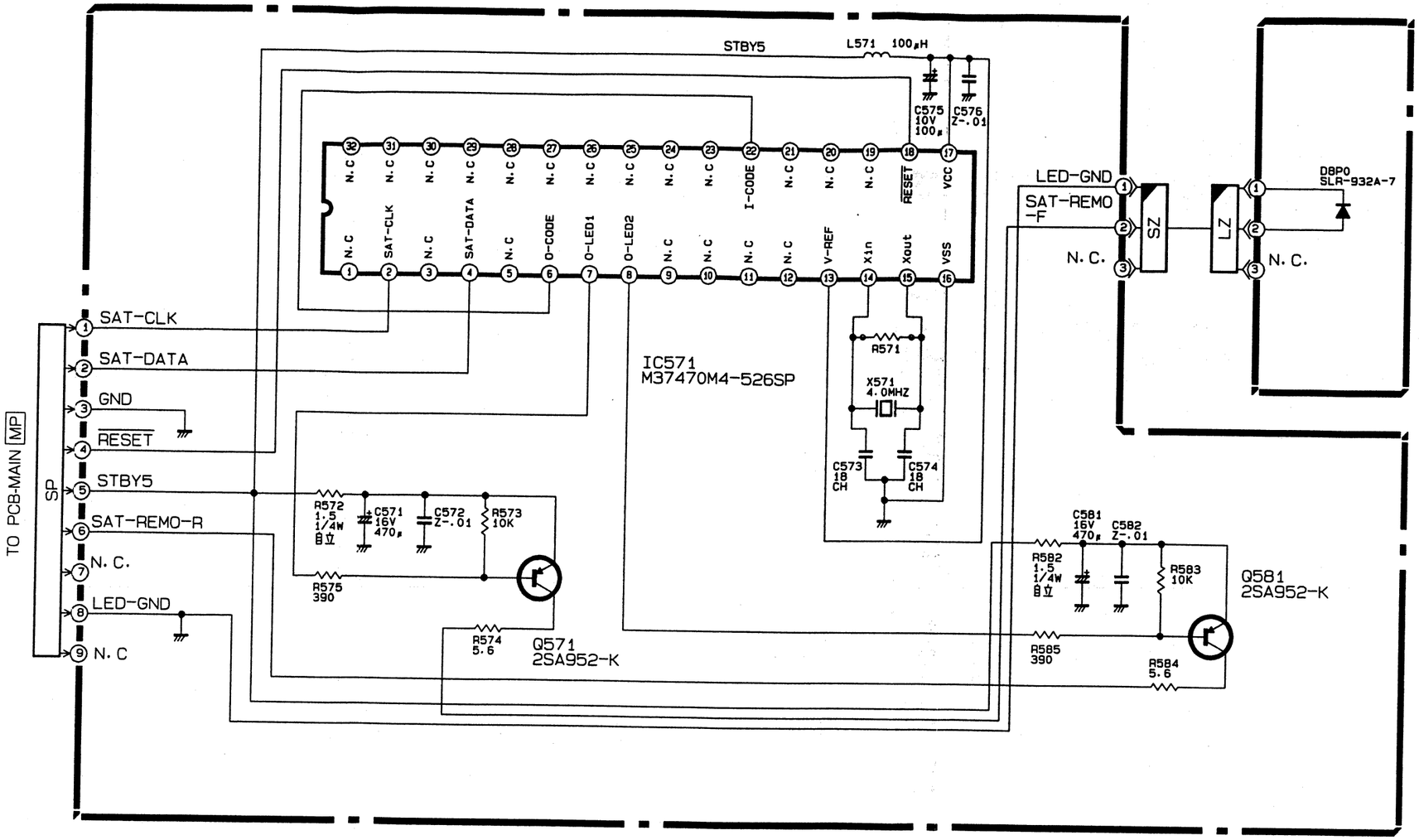
○ Employ × Not employ

| SYMBOL / MODEL | D8J0 | D8J1 D8J2 | D8K0 | D8K1 | D8K2 | D8K3 | D8L0 | D8L1 | D8L2 | D8L3 | D8M0 | D8M1 | A AREA | C8H0 C8H1 | R8H1 | J820 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HS-541V(Y) | ○ | ○ | ○ | ○ | × | × | × | × | × | × | ○ | ○ | × | ○ | ○ | × |
| HS-541V(B) | ○ | ○ | ○ | × | × | × | ○ | ○ | × | × | × | × | ○ | ○ | ○ | × |
| HS-541V(G) | ○ | ○ | × | ○ | × | × | × | × | ○ | × | ○ | × | ○ | ○ | ○ | × |
| HS-541V(IR) | ○ | ○ | × | × | × | ○ | × | × | × | × | × | × | × | ○ | ○ | × |
| HS-541V(E) | ○ | ○ | ○ | × | ○ | × | ○ | × | × | × | ○ | ○ | × | ○ | ○ | × |
| HS-541V(A) | ○ | ○ | × | × | × | ○ | × | × | ○ | × | ○ | × | × | × | × | ○ |
| HS-541V(NZ) | ○ | ○ | × | × | × | × | × | × | × | × | × | × | × | × | × | ○ |
| HS-541V(SA) | ○ | ○ | × | × | × | ○ | × | × | × | × | ○ | ○ | × | × | × | ○ |

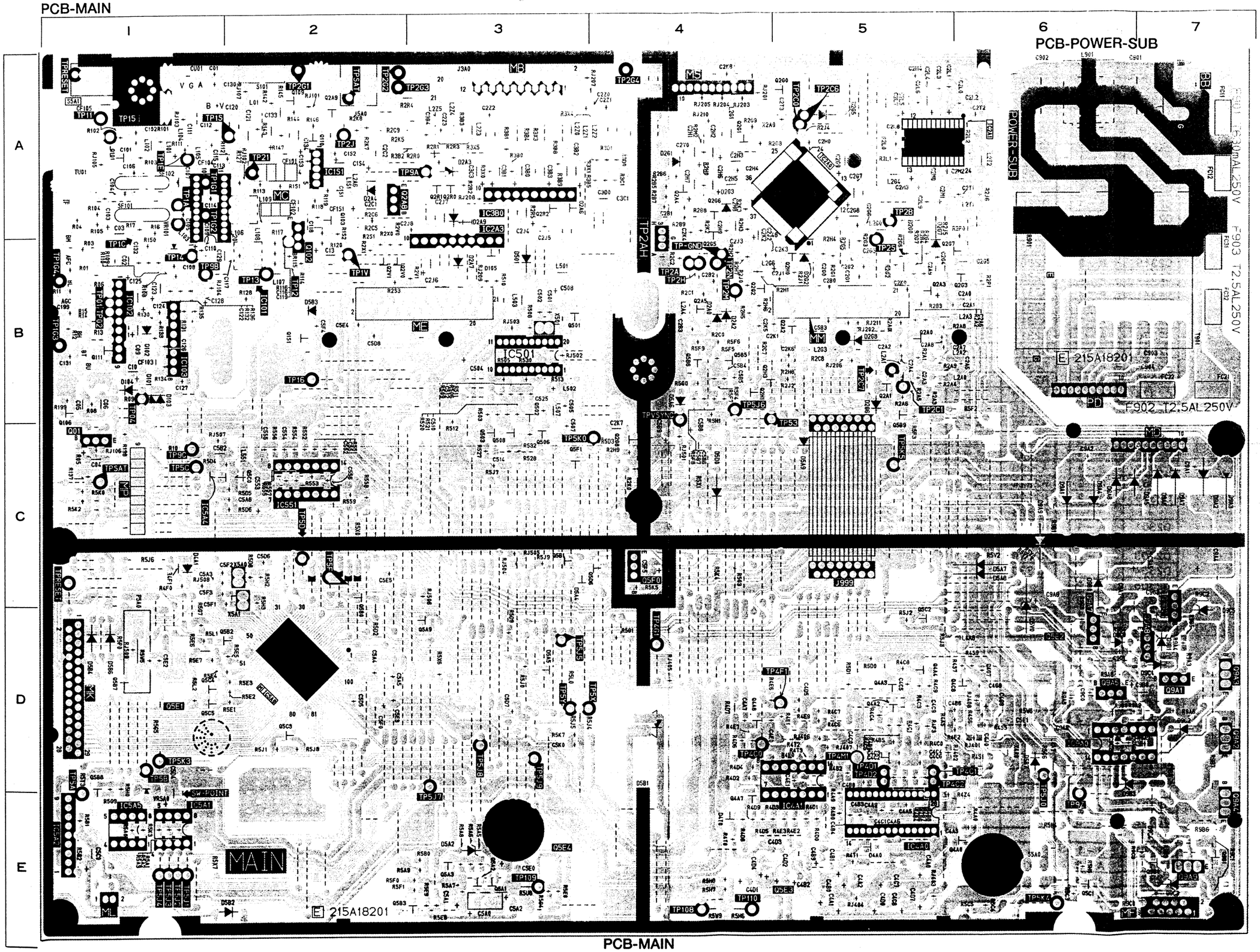
Z8A0 PREAMAP



# FOR HS-541V(B) ⚠PCB-SAT



PCB-MAIN




PCB-MAIN

| SYMBOL NO. | ADDRESS |
|---|---|
| C01 | A – 2 |
| C02 | B – 1 |
| C03 | A – 1 |
| C04 | C – 1 |
| C05 | B – 1 |
| C06 | B – 1 |
| C09 | B – 1 |
| C10 | B – 1 |
| C13 | B – 2 |
| C101 | A – 1 |
| C102 | A – 1 |
| C103 | A – 1 |
| C104 | A – 1 |
| C105 | A – 1 |
| C106 | A – 1 |
| C107 | A – 1 |
| C108 | B – 1 |
| C109 | A – 1 |
| C110 | B – 1 |
| C111 | A – 1 |
| C112 | A – 1 |
| C113 | A – 1 |
| C114 | A – 1 |
| C115 | A – 1 |
| C116 | B – 2 |
| C117 | B – 2 |
| C118 | A – 2 |
| C119 | B – 2 |
| C120 | A – 2 |
| C121 | A – 2 |
| C122 | B – 2 |
| C123 | B – 1 |
| C124 | B – 1 |
| C125 | B – 1 |
| C126 | B – 1 |
| C127 | B – 1 |
| C128 | B – 1 |
| C129 | B – 2 |
| C130 | A – 2 |
| C131 | B – 1 |
| C132 | B – 1 |
| C133 | A – 2 |
| C134 | A – 2 |
| C199 | B – 1 |
| C501 | B – 3 |
| C502 | B – 3 |
| C504 | B – 3 |
| C505 | B – 3 |
| C507 | C – 3 |
| C508 | B – 3 |
| C510 | C – 3 |
| C512 | B – 3 |
| C514 | C – 3 |
| C525 | B – 3 |
| C551 | C – 2 |
| C552 | C – 2 |
| C553 | C – 2 |
| C554 | C – 2 |
| C555 | C – 2 |
| C556 | C – 2 |

| SYMBOL NO. | ADDR |
|---|---|
| C901 | A – |
| C902 | A – |
| C903 | B – |
| C904 | B – |
| C1S1 | A – |
| C1S2 | A – |
| C1S3 | A – |
| C1S4 | A – |
| C2A0 | B – |
| C2A1 | B – |
| C2A2 | B – |
| C2A3 | B – |
| C2A4 | B – |
| C2A5 | B – |
| C2A6 | B – |
| C2A7 | B – |
| C2A8 | B – |
| C2A9 | B – |
| C2B0 | B – |
| C2B1 | A – |
| C2B2 | B – |
| C2B3 | B – |
| C2C1 | A – |
| C2C2 | A – |
| C2G0 | B – |
| C2G1 | B – |
| C2G2 | B – |
| C2G3 | B – |
| C2G4 | B – |
| C2G5 | B – |
| C2G6 | A – |
| C2G7 | A – |
| C2G8 | A – |
| C2G9 | A – |
| C2H0 | A – |
| C2H1 | A – |
| C2H2 | A – |
| C2H3 | A – |
| C2H4 | A – |
| C2H5 | A – |
| C2H7 | A – |
| C2H8 | A – |
| C2H9 | A – |
| C2J1 | B – |
| C2J2 | B – |
| C2J3 | B – |
| C2J4 | A – |
| C2J5 | B – |
| C2J6 | B – |
| C2J7 | A – |
| C2J8 | A – |
| C2K0 | B – |
| C2K1 | B – |
| C2K2 | B – |
| C2K3 | B – |
| C2K4 | B – |
| C2K5 | B – |
| C2K6 | B – |
| C2K7 | C – |
| C2K8 | A – |

AIN

| ADDRESS |
|---|
| A – 2 |
| B – 1 |
| A – 1 |
| C – 1 |
| B – 1 |
| B – 1 |
| B – 1 |
| B – 1 |
| B – 2 |
| A – 1 |
| A – 1 |
| A – 1 |
| A – 1 |
| A – 1 |
| A – 1 |
| B – 1 |
| A – 1 |
| B – 1 |
| A – 1 |
| A – 1 |
| A – 1 |
| A – 1 |
| A – 1 |
| B – 2 |
| B – 2 |
| A – 2 |
| B – 2 |
| A – 2 |
| A – 2 |
| B – 2 |
| B – 1 |
| B – 1 |
| B – 1 |
| A – 2 |
| A – 2 |
| B – 1 |
| B – 3 |
| B – 3 |
| B – 3 |
| C – 3 |
| B – 3 |
| C – 3 |
| B – 3 |
| C – 3 |
| B – 3 |
| C – 2 |
| C – 2 |
| C – 2 |
| C – 2 |
| C – 2 |
| C – 2 |

| SYMBOL NO. | ADDRESS |
|---|---|
| C901 | A – 6 |
| C902 | A – 6 |
| C903 | B – 7 |
| C904 | B – 7 |
| C1S1 | A – 2 |
| C1S2 | A – 2 |
| C1S3 | A – 2 |
| C1S4 | A – 2 |
| C2A0 | B – 6 |
| C2A1 | B – 6 |
| C2A2 | B – 5 |
| C2A3 | B – 5 |
| C2A4 | B – 5 |
| C2A5 | B – 6 |
| C2A6 | B – 5 |
| C2A7 | B – 5 |
| C2A8 | B – 5 |
| C2A9 | B – 5 |
| C2B0 | B – 5 |
| C2B1 | A – 4 |
| C2B2 | B – 4 |
| C2B3 | B – 4 |
| C2C1 | A – 2 |
| C2C2 | A – 2 |
| C2G0 | B – 5 |
| C2G1 | B – 5 |
| C2G2 | B – 5 |
| C2G3 | B – 5 |
| C2G4 | B – 5 |
| C2G5 | B – 6 |
| C2G6 | A – 5 |
| C2G7 | A – 5 |
| C2G8 | A – 5 |
| C2G9 | A – 5 |
| C2H0 | A – 5 |
| C2H1 | A – 4 |
| C2H2 | A – 4 |
| C2H3 | A – 4 |
| C2H4 | A – 4 |
| C2H5 | A – 4 |
| C2H7 | A – 4 |
| C2H8 | A – 4 |
| C2H9 | A – 4 |
| C2J1 | B – 5 |
| C2J2 | B – 4 |
| C2J3 | B – 4 |
| C2J4 | A – 3 |
| C2J5 | B – 3 |
| C2J6 | B – 3 |
| C2J7 | A – 3 |
| C2J8 | A – 3 |
| C2K0 | B – 5 |
| C2K1 | B – 4 |
| C2K2 | B – 4 |
| C2K3 | B – 5 |
| C2K4 | B – 4 |
| C2K5 | B – 4 |
| C2K6 | B – 5 |
| C2K7 | C – 4 |
| C2K8 | A – 4 |

| SYMBOL NO. | ADDRESS |
|---|---|
| C2L0 | A – 5 |
| C2L1 | A – 5 |
| C2L2 | A – 6 |
| C2L3 | A – 5 |
| C2L4 | A – 5 |
| C2L5 | A – 5 |
| C2L6 | A – 5 |
| C2L7 | A – 5 |
| C2L8 | A – 5 |
| C2L9 | A – 5 |
| C2M0 | A – 5 |
| C2M1 | A – 5 |
| C2M2 | A – 5 |
| C2M3 | A – 5 |
| C2M4 | A – 5 |
| C2T1 | A – 6 |
| C2T2 | A – 6 |
| C2T3 | A – 5 |
| C2Y0 | A – 4 |
| C2Z0 | A – 4 |
| C2Z1 | A – 4 |
| C2Z2 | A – 3 |
| C2Z3 | A – 3 |
| C3B0 | A – 3 |
| C3B1 | A – 3 |
| C3B2 | A – 3 |
| C3B3 | A – 3 |
| C3B4 | A – 3 |
| C3C1 | A – 4 |
| C3C3 | A – 3 |
| C3D0 | A – 4 |
| C4A0 | E – 5 |
| C4A1 | E – 5 |
| C4A2 | E – 5 |
| C4A3 | E – 5 |
| C4A5 | E – 5 |
| C4A6 | E – 5 |
| C4A7 | D – 4 |
| C4A9 | E – 5 |
| C4B0 | E – 5 |
| C4B1 | E – 5 |
| C4B2 | E – 5 |
| C4B3 | E – 5 |
| C4B4 | E – 5 |
| C4B6 | D – 6 |
| C4B8 | D – 5 |
| C4B9 | E – 5 |
| C4C0 | D – 5 |
| C4C1 | E – 5 |
| C4C2 | D – 5 |
| C4C3 | D – 5 |
| C4C4 | D – 5 |
| C4C5 | D – 5 |
| C4C6 | D – 5 |
| C4C7 | E – 5 |
| C4C8 | E – 5 |
| C4C9 | D – 5 |
| C4D0 | E – 5 |
| C4D1 | E – 4 |
| C4D2 | E – 5 |

| SYMBOL NO. | ADDRESS |
|---|---|
| C4D3 | E – 4 |
| C4D4 | E – 4 |
| C4D5 | D – 5 |
| C4D7 | E – 5 |
| C4E0 | D – 4 |
| C4E1 | D – 5 |
| C4G7 | D – 6 |
| C4G8 | D – 6 |
| C4G9 | D – 6 |
| C4J0 | D – 6 |
| C5A0 | E – 3 |
| C5A1 | E – 3 |
| C5A2 | E – 3 |
| C5A3 | C – 2 |
| C5A4 | D – 2 |
| C5A5 | D – 2 |
| C5A6 | C – 2 |
| C5B2 | C – 1 |
| C5B3 | B – 5 |
| C5B4 | B – 4 |
| C5B5 | B – 4 |
| C5B6 | B – 4 |
| C5B7 | B – 4 |
| C5B8 | C – 4 |
| C5B9 | C – 4 |
| C5C0 | E – 1 |
| C5D4 | D – 1 |
| C5D5 | D – 2 |
| C5D6 | C – 2 |
| C5D7 | D – 3 |
| C5D8 | B – 2 |
| C5E0 | E – 3 |
| C5E1 | D – 6 |
| C5E2 | D – 1 |
| C5E3 | D – 2 |
| C5E4 | B – 2 |
| C5E5 | C – 2 |
| C5F0 | D – 2 |
| C5F1 | D – 1 |
| C5F2 | C – 2 |
| C5F3 | C – 1 |
| C5F4 | B – 2 |
| C5F5 | C – 4 |
| C5K0 | D – 3 |
| C9A1 | C – 7 |
| C9A2 | C – 6 |
| C9A4 | C – 7 |
| C9A5 | C – 7 |
| C9A6 | D – 6 |
| C9A7 | D – 6 |
| C9A8 | D – 6 |
| C9A9 | D – 7 |
| C9B0 | D – 7 |
| C9C0 | D – 6 |
| C9C1 | D – 6 |
| C9C2 | D – 6 |
| C9C3 | D – 7 |
| | |
| CF101 | A – 2 |
| CF102 | A – 2 |

| SYMBOL NO. | ADDRESS |
|---|---|
| CF103 | B – 1 |
| CF104 | A – 1 |
| CF105 | A – 1 |
| CF1S1 | A – 2 |
| | |
| CU01 | A – 1 |
| | |
| D101 | B – 1 |
| D102 | B – 1 |
| D103 | B – 1 |
| D104 | B – 1 |
| D105 | B – 3 |
| D501 | B – 3 |
| D2A0 | B – 4 |
| D2A2 | B – 4 |
| D2A3 | A – 3 |
| D2A4 | A – 2 |
| D2A6 | A – 3 |
| D2A7 | B – 3 |
| D2A9 | A – 3 |
| D2G0 | A – 5 |
| D2G1 | A – 4 |
| D2G2 | B – 5 |
| D2G3 | A – 4 |
| D2G5 | A – 5 |
| D2G6 | B – 5 |
| D2G7 | B – 5 |
| D2G8 | B – 5 |
| D4A0 | E – 5 |
| D4A1 | C – 1 |
| D4T0 | E – 4 |
| D5A2 | E – 3 |
| D5A4 | C – 3 |
| D5A5 | D – 3 |
| D5A6 | B – 4 |
| D5A7 | C – 6 |
| D5A8 | C – 6 |
| D5A9 | C – 5 |
| D5B1 | D – 4 |
| D5B2 | E – 2 |
| D5B3 | B – 2 |
| D5B4 | D – 1 |
| D5B6 | D – 1 |
| D5B7 | D – 6 |
| D5D0 | C – 4 |
| D5V0 | D – 6 |
| D9A1 | C – 6 |
| D9A2 | C – 7 |
| D9A3 | C – 7 |
| D9A4 | C – 6 |
| D9A5 | C – 6 |
| D9A6 | C – 7 |
| D9A7 | C – 7 |
| D9A8 | C – 6 |
| D9A9 | C – 6 |
| D9B0 | C – 6 |
| D9B1 | D – 7 |
| D9B3 | E – 6 |
| D9C0 | D – 6 |
| D9C1 | D – 7 |

| SYMBOL NO. | ADDRESS |
|---|---|
| D9C2 | D – 7 |
| D9C3 | E – 7 |
| D9C4 | E – 7 |
| D9C5 | D – 7 |
| | |
| F901 | A – 7 |
| F902 | B – 7 |
| F903 | B – 7 |
| | |
| FC11 | A – 7 |
| FC12 | A – 7 |
| FC21 | B – 7 |
| FC22 | B – 7 |
| FC31 | B – 7 |
| FC32 | B – 7 |
| | |
| IC101 | A – 1 |
| IC102 | B – 1 |
| IC103 | B – 1 |
| IC501 | B – 3 |
| IC551 | C – 2 |
| IC1S1 | A – 2 |
| IC2A0 | A – 5 |
| IC2A1 | A – 5 |
| IC2A3 | B – 3 |
| IC3B0 | A – 3 |
| IC4A0 | E – 5 |
| IC4A1 | E – 5 |
| IC5A0 | D – 2 |
| IC5A1 | E – 1 |
| IC5A2 | E – 1 |
| IC5A4 | C – 1 |
| IC5A5 | E – 1 |
| IC9A0 | D – 6 |
| | |
| J3A0 | A – 3 |
| J5A0 | A – 2 |
| J999 | C – 5 |
| | |
| L01 | A – 2 |
| L101 | A – 1 |
| L102 | A – 1 |
| L103 | B – 1 |
| L104 | A – 1 |
| L105 | A – 1 |
| L106 | B – 2 |
| L107 | B – 2 |
| L108 | A – 2 |
| L109 | A – 2 |
| L501 | B – 3 |
| L502 | B – 3 |
| L503 | B – 3 |
| L507 | B – 3 |
| L551 | C – 2 |
| L901 | A – 6 |
| L1S1 | A – 2 |
| L2A0 | B – 6 |
| L2A1 | B – 5 |
| L2A2 | B – 5 |
| L2A3 | B – 5 |

| SYMBOL NO. | ADDRESS |
|---|---|
| L2A4 | B – 4 |
| L2A6 | A – 2 |
| L2G0 | A – 5 |
| L2G1 | A – 4 |
| L2G3 | B – 5 |
| L2G4 | A – 5 |
| L2G6 | B – 4 |
| L2T1 | A – 6 |
| L2T2 | A – 6 |
| L2Z0 | A – 3 |
| L2Z1 | A – 4 |
| L2Z2 | A – 4 |
| L2Z3 | A – 3 |
| L2Z4 | A – 3 |
| L2Z5 | A – 3 |
| L4A7 | D – 6 |
| L4A8 | D – 6 |
| | |
| P5A0 | D – 1 |
| | |
| Q01 | C – 1 |
| Q101 | A – 1 |
| Q102 | B – 2 |
| Q103 | A – 2 |
| Q106 | B – 1 |
| Q109 | A – 2 |
| Q110 | A – 2 |
| Q111 | B – 1 |
| Q501 | B – 3 |
| Q502 | B – 3 |
| Q503 | C – 3 |
| Q506 | C – 3 |
| Q508 | C – 3 |
| Q1S1 | B – 2 |
| Q2A1 | B – 5 |
| Q2A2 | B – 5 |
| Q2A3 | B – 5 |
| Q2A4 | A – 4 |
| Q2A5 | B – 4 |
| Q2A8 | B – 5 |
| Q2A9 | A – 2 |
| Q2G0 | A – 5 |
| Q2G1 | A – 4 |
| Q2G2 | B – 4 |
| Q2G3 | B – 6 |
| Q2G5 | B – 4 |
| Q2G6 | A – 4 |
| Q2G7 | B – 5 |
| Q2G8 | C – 4 |
| Q2H0 | B – 5 |
| Q2H1 | B – 4 |
| Q2H3 | B – 4 |
| Q2R0 | A – 3 |
| Q2R1 | A – 3 |
| Q2R2 | A – 3 |
| Q2V0 | B – 2 |
| Q2V1 | B – 2 |
| Q4A0 | E – 6 |
| Q4A2 | D – 5 |
| Q4A3 | D – 5 |

| SYMBOL NO. | ADDRESS |
|---|---|
| Q4A4 | D – 5 |
| Q4A7 | E – 4 |
| Q4A8 | D – 4 |
| Q4C8 | D – 6 |
| Q5A1 | E – 3 |
| Q5A2 | E – 3 |
| Q5A3 | E – 3 |
| Q5A9 | D – 3 |
| Q5B0 | D – 2 |
| Q5B1 | C – 3 |
| Q5B2 | D – 2 |
| Q5B3 | E – 3 |
| Q5B5 | B – 4 |
| Q5B6 | B – 4 |
| Q5B7 | D – 1 |
| Q5B8 | E – 1 |
| Q5B9 | C – 5 |
| Q5C0 | C – 2 |
| Q5C1 | E – 6 |
| Q5C2 | D – 5 |
| Q5C3 | D – 2 |
| Q5C4 | D – 1 |
| Q5C5 | D – 1 |
| Q5D6 | C – 4 |
| Q5E1 | D – 1 |
| Q5E2 | D – 6 |
| Q5E3 | E – 5 |
| Q5E4 | E – 3 |
| Q5F0 | C – 4 |
| Q5F1 | C – 3 |
| Q9A1 | D – 7 |
| Q9A2 | D – 7 |
| Q9A3 | D – 7 |
| Q9A4 | E – 7 |
| Q9A5 | D – 6 |
| Q9A7 | D – 6 |
| Q9A8 | D – 7 |
| Q9A9 | E – 7 |
| Q9B0 | E – 7 |
| Q9B1 | E – 7 |
| Q9B2 | D – 7 |
| | |
| R01 | B – 1 |
| R03 | B – 1 |
| R04 | A – 1 |
| R05 | C – 1 |
| R06 | B – 1 |
| R08 | B – 1 |
| R09 | B – 1 |
| R10 | C – 1 |
| R11 | B – 1 |
| R13 | B – 1 |
| R14 | B – 1 |
| R15 | B – 1 |
| R16 | A – 1 |
| R17 | A – 1 |
| R101 | A – 1 |
| R102 | A – 1 |
| R103 | A – 1 |
| R104 | A – 1 |

| SYMBOL NO. | ADDRESS |
|---|---|
| R105 | B – 1 |
| R108 | B – 1 |
| R109 | B – 1 |
| R110 | B – 1 |
| R111 | A – 1 |
| R112 | A – 2 |
| R113 | A – 2 |
| R114 | B – 2 |
| R115 | B – 2 |
| R116 | B – 2 |
| R117 | B – 2 |
| R118 | A – 2 |
| R119 | A – 2 |
| R120 | B – 2 |
| R127 | A – 2 |
| R128 | B – 2 |
| R130 | B – 1 |
| R131 | B – 1 |
| R132 | B – 2 |
| R133 | B – 1 |
| R134 | B – 1 |
| R135 | B – 1 |
| R136 | B – 2 |
| R137 | C – 1 |
| R142 | A – 2 |
| R143 | A – 2 |
| R144 | A – 2 |
| R145 | A – 2 |
| R146 | A – 2 |
| R147 | A – 2 |
| R150 | B – 1 |
| R198 | C – 1 |
| R199 | B – 1 |
| R503 | C – 3 |
| R505 | B – 3 |
| R506 | B – 3 |
| R508 | B – 3 |
| R509 | B – 3 |
| R510 | B – 3 |
| R511 | B – 3 |
| R512 | C – 3 |
| R513 | B – 3 |
| R520 | C – 3 |
| R521 | C – 3 |
| R527 | C – 3 |
| R528 | C – 3 |
| R530 | B – 3 |
| R532 | C – 3 |
| R551 | C – 2 |
| R552 | C – 2 |
| R553 | C – 2 |
| R554 | C – 2 |
| R555 | C – 2 |
| R556 | C – 2 |
| R557 | C – 2 |
| R558 | C – 2 |
| R559 | C – 2 |
| R901 | B – 6 |
| R1S1 | A – 2 |
| R1S2 | B – 2 |

| SYMBOL NO. | ADDRESS |
|---|---|
| R2A0 | B – 5 |
| R2A1 | B – 5 |
| R2A2 | B – 5 |
| R2A3 | B – 5 |
| R2A4 | B – 5 |
| R2A5 | B – 5 |
| R2A6 | B – 5 |
| R2A8 | B – 5 |
| R2A9 | B – 5 |
| R2B3 | B – 5 |
| R2B4 | B – 5 |
| R2B5 | A – 4 |
| R2B6 | A – 4 |
| R2B7 | A – 4 |
| R2B8 | A – 4 |
| R2B9 | A – 4 |
| R2C0 | B – 4 |
| R2C1 | B – 4 |
| R2C2 | B – 4 |
| R2C5 | A – 2 |
| R2C6 | A – 2 |
| R2C7 | B – 4 |
| R2C8 | B – 5 |
| R2C9 | A – 2 |
| R2G1 | B – 5 |
| R2G2 | B – 5 |
| R2G3 | B – 5 |
| R2G4 | B – 5 |
| R2G5 | B – 5 |
| R2G6 | B – 5 |
| R2G7 | B – 5 |
| R2G8 | A – 4 |
| R2G9 | A – 4 |
| R2H0 | A – 4 |
| R2H1 | B – 5 |
| R2H2 | B – 4 |
| R2H3 | A – 4 |
| R2H4 | B – 5 |
| R2H5 | B – 4 |
| R2H6 | B – 4 |
| R2H7 | B – 4 |
| R2H8 | B – 5 |
| R2H9 | C – 4 |
| R2J0 | B – 4 |
| R2J1 | B – 5 |
| R2J2 | B – 5 |
| R2J4 | A – 5 |
| R2J5 | A – 5 |
| R2J6 | A – 6 |
| R2K0 | C – 4 |
| R2K2 | A – 4 |
| R2K3 | A – 4 |
| R2K5 | A – 2 |
| R2K7 | A – 2 |
| R2L0 | A – 5 |
| R2L1 | A – 5 |
| R2L2 | A – 6 |
| R2M2 | A – 4 |
| R2P0 | A – 6 |
| R2P1 | B – 6 |

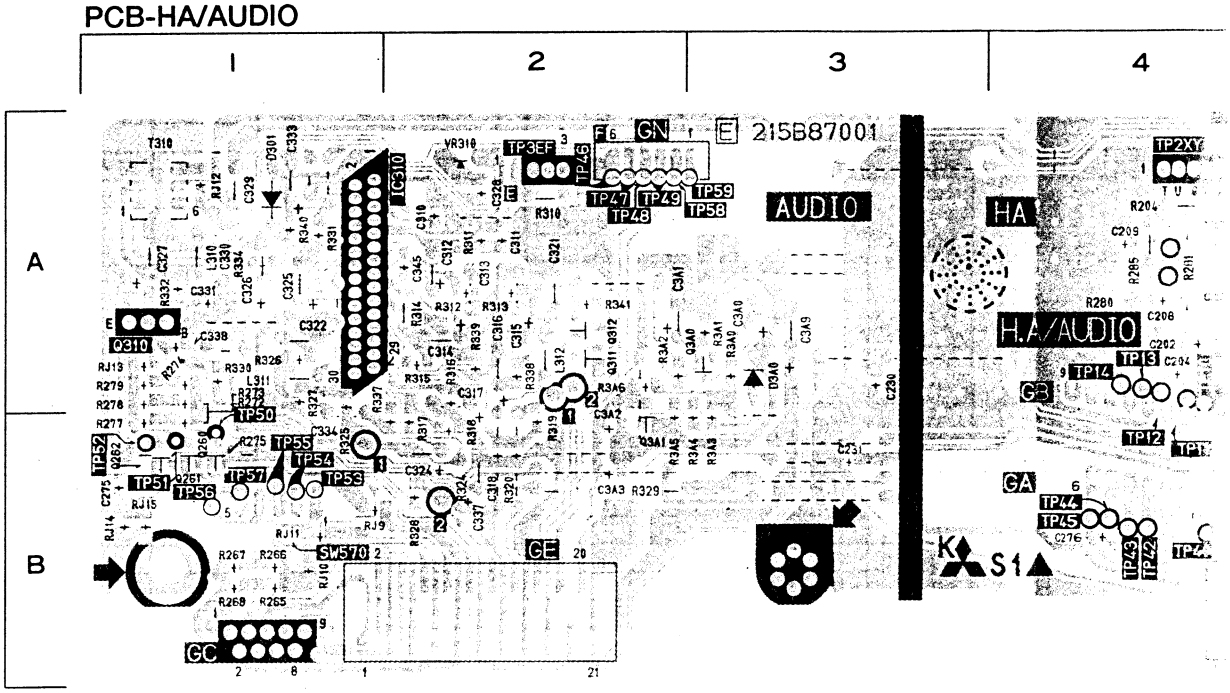
| SYMBOL NO. | ADDRESS |
|---|---|
| R2R0 | A – 3 |
| R2R1 | A – 3 |
| R2R2 | A – 3 |
| R2R3 | A – 3 |
| R2R4 | A – 3 |
| R2R5 | A – 3 |
| R2S1 | B – 2 |
| R2S3 | B – 2 |
| R2V0 | A – 2 |
| R2V1 | B – 3 |
| R2X0 | B – 2 |
| R2X1 | B – 2 |
| R2X8 | A – 2 |
| R3B0 | A – 3 |
| R3B1 | A – 3 |
| R3B2 | A – 3 |
| R3B3 | A – 3 |
| R3B4 | A – 3 |
| R3B5 | A – 4 |
| R3B8 | A – 3 |
| R3B9 | A – 3 |
| R3C1 | A – 4 |
| R3D0 | A – 4 |
| R3D1 | A – 4 |
| R3X0 | A – 3 |
| R3X1 | A – 4 |
| R3X3 | A – 3 |
| R3X4 | A – 3 |
| R3X5 | A – 3 |
| R4A0 | E – 6 |
| R4A5 | D – 5 |
| R4A9 | E – 5 |
| R4B0 | E – 5 |
| R4B2 | D – 5 |
| R4B4 | E – 5 |
| R4B5 | D – 5 |
| R4B6 | E – 5 |
| R4B7 | E – 5 |
| R4B8 | E – 5 |
| R4B9 | D – 5 |
| R4C0 | D – 5 |
| R4C1 | D – 5 |
| R4C3 | D – 5 |
| R4C4 | D – 5 |
| R4C5 | D – 5 |
| R4C6 | D – 5 |
| R4C7 | D – 5 |
| R4C8 | D – 5 |
| R4C9 | D – 5 |
| R4D0 | E – 5 |
| R4D1 | E – 5 |
| R4D2 | D – 4 |
| R4D3 | E – 4 |
| R4D4 | D – 4 |
| R4D5 | E – 4 |
| R4D6 | D – 4 |
| R4D7 | D – 4 |
| R4D8 | E – 4 |
| R4D9 | E – 4 |
| R4E0 | D – 5 |

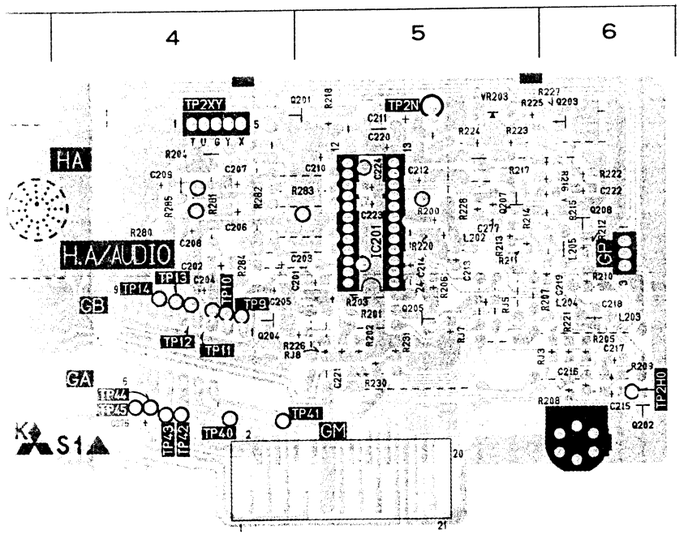
| SYMBOL NO. | ADDRESS |
|---|---|
| R4E1 | D – 5 |
| R4E2 | E – 5 |
| R4E3 | E – 5 |
| R4E6 | D – 5 |
| R4E7 | D – 4 |
| R4E9 | D – 5 |
| R4F0 | C – 1 |
| R4F1 | C – 1 |
| R4F2 | D – 6 |
| R4F3 | D – 5 |
| R4S1 | D – 6 |
| R4S5 | D – 6 |
| R4S6 | D – 6 |
| R4S7 | D – 6 |
| R4S9 | D – 6 |
| R4T0 | E – 4 |
| R4T1 | E – 5 |
| R4T2 | D – 5 |
| R4T3 | D – 5 |
| R4Z4 | E – 6 |
| R5A0 | E – 1 |
| R5A1 | E – 1 |
| R5A2 | E – 1 |
| R5A3 | E – 1 |
| R5A5 | E – 3 |
| R5A6 | E – 3 |
| R5A7 | E – 3 |
| R5A8 | E – 3 |
| R5A9 | E – 3 |
| R5B0 | E – 3 |
| R5B1 | E – 1 |
| R5B2 | E – 1 |
| R5C3 | E – 6 |
| R5C4 | E – 6 |
| R5C5 | E – 6 |
| R5D0 | D – 5 |
| R5D1 | D – 5 |
| R5D2 | D – 2 |
| R5D3 | C – 4 |
| R5D4 | C – 2 |
| R5D5 | C – 2 |
| R5D6 | C – 2 |
| R5D8 | C – 2 |
| R5D9 | D – 3 |
| R5E0 | E – 3 |
| R5E1 | D – 2 |
| R5E2 | D – 2 |
| R5E3 | D – 2 |
| R5E4 | D – 2 |
| R5E5 | D – 2 |
| R5E6 | D – 1 |
| R5E7 | D – 1 |
| R5E8 | E – 3 |
| R5E9 | E – 3 |
| R5F0 | E – 3 |
| R5F1 | E – 3 |
| R5F2 | B – 6 |
| R5F3 | C – 5 |
| R5F4 | B – 4 |
| R5F5 | B – 4 |

| SYMBOL NO. | ADDRESS |
|---|---|
| R5F6 | B – 4 |
| R5F7 | B – 4 |
| R5F8 | B – 4 |
| R5F9 | B – 4 |
| R5G0 | B – 4 |
| R5G1 | D – 4 |
| R5G3 | C – 4 |
| R5G4 | E – 3 |
| R5G5 | D – 1 |
| R5G6 | D – 6 |
| R5G7 | D – 1 |
| R5G9 | E – 1 |
| R5H0 | E – 1 |
| R5H1 | C – 4 |
| R5H2 | C – 2 |
| R5H3 | D – 2 |
| R5H4 | E – 6 |
| R5H5 | E – 6 |
| R5H6 | E – 4 |
| R5H7 | E – 4 |
| R5H8 | E – 4 |
| R5J0 | D – 3 |
| R5J1 | D – 2 |
| R5J2 | D – 5 |
| R5J3 | D – 5 |
| R5J4 | D – 4 |
| R5J5 | D – 3 |
| R5J6 | C – 1 |
| R5J7 | C – 3 |
| R5J8 | D – 2 |
| R5J9 | C – 3 |
| R5K0 | C – 1 |
| R5K2 | C – 1 |
| R5K3 | E – 1 |
| R5K5 | C – 4 |
| R5K7 | D – 3 |
| R5L0 | D – 3 |
| R5L1 | D – 1 |
| R5L2 | D – 1 |
| R5P0 | D – 1 |
| R5U8 | E – 3 |
| R5V0 | C – 6 |
| R5V1 | C – 6 |
| R5V2 | C – 6 |
| R5W5 | D – 1 |
| R5W6 | D – 6 |
| R5W9 | E – 4 |
| R5X0 | C – 2 |
| R5X1 | C – 4 |
| R5X4 | C – 4 |
| R5X6 | D – 3 |
| R5X7 | E – 1 |
| R5Y3 | E – 1 |
| R9A2 | D – 7 |
| R9A3 | D – 7 |
| R9A4 | D – 7 |
| R9A5 | D – 6 |
| R9A6 | D – 7 |
| R9A8 | D – 6 |
| R9A9 | D – 6 |

| SYMBOL NO. | A |
|---|---|
| R9B0 | |
| R9B1 | |
| R9B3 | |
| R9B4 | |
| R9B5 | |
| R9B6 | |
| R9B7 | |
| R9B8 | |
| R9B9 | |
| R9C0 | |
| R9C1 | |
| R9C2 | |
| R9C3 | |
| | |
| RJ101 | |
| RJ102 | |
| RJ103 | |
| RJ104 | |
| RJ105 | |
| RJ106 | |
| RJ107 | |
| RJ201 | |
| RJ202 | |
| RJ203 | |
| RJ204 | |
| RJ205 | |
| RJ206 | |
| RJ207 | |
| RJ208 | |
| RJ209 | |
| RJ210 | |
| RJ211 | |
| RJ401 | |
| RJ402 | |
| RJ403 | |
| RJ404 | |
| RJ405 | |
| RJ406 | |
| RJ407 | |
| RJ408 | |
| RJ501 | |
| RJ502 | |
| RJ503 | |
| RJ504 | |
| RJ505 | |
| RJ506 | |
| RJ507 | |
| RJ508 | |
| RJ509 | |
| | |
| S101 | |
| S5A0 | |
| S5A1 | |
| | |
| SF101 | |
| SF102 | |
| | |
| T901 | |
| | |
| TP01 | |

PCB-HA/AUDIO


1
2
3
4
A
B
215B87001
AUDIO
HA
H.A./AUDIO
IC310
Q310
SW570
S1
TP50
TP51
TP52
TP53
TP54
TP55
TP56
TP57
TP59
TP58
TP47
TP49
TP48
TP3EF
TP46
TP2XY
TP13
TP14
TP12
TP44
TP45
TP43
TP42
GA
GB
GC
GE
GF
GN




PCB-HA/AUDIO

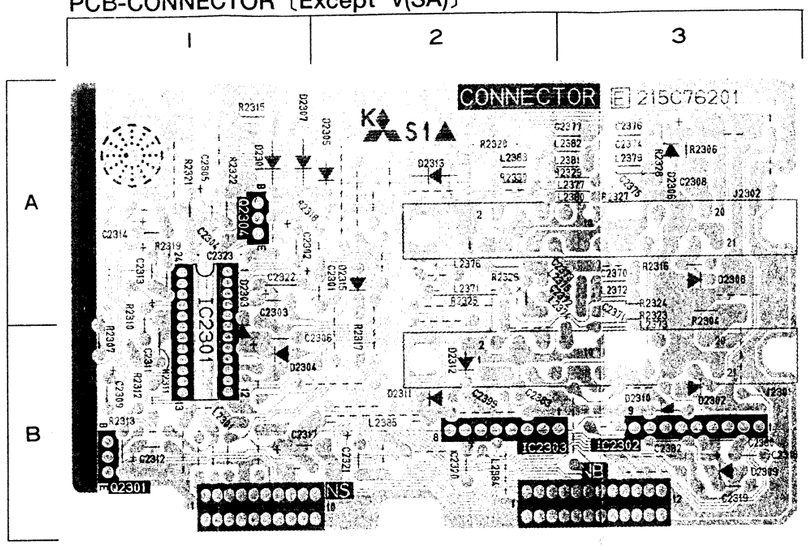
| SYMBOL NO. | ADDRESS |
|---|---|
| C201 | A – 4 |
| C202 | A – 4 |
| C203 | A – 4 |
| C204 | A – 4 |
| C205 | A – 4 |
| C206 | A – 4 |
| C207 | A – 4 |
| C208 | A – 4 |
| C209 | A – 4 |
| C210 | A – 5 |
| C211 | A – 5 |
| C212 | A – 5 |
| C213 | A – 5 |
| C214 | A – 5 |
| C215 | B – 6 |
| C216 | B – 6 |
| C217 | B – 6 |
| C218 | A – 6 |
| C219 | A – 6 |
| C220 | A – 5 |
| C221 | B – 5 |
| C222 | A – 6 |
| C223 | A – 5 |
| C224 | A – 5 |
| C230 | A – 3 |
| C231 | B – 3 |
| C275 | B – 1 |
| C276 | B – 4 |
| C277 | A – 5 |
| C310 | A – 2 |
| C311 | A – 2 |
| C312 | A – 2 |
| C313 | A – 2 |
| C314 | A – 2 |
| C315 | A – 2 |
| C316 | A – 2 |
| C317 | A – 2 |
| C318 | B – 2 |
| C321 | A – 2 |
| C322 | A – 1 |
| C324 | B – 2 |
| C325 | A – 1 |
| C326 | A – 1 |
| C327 | A – 1 |
| C328 | A – 2 |
| C329 | A – 1 |
| C330 | A – 1 |
| C331 | A – 1 |
| C333 | A – 1 |
| C334 | B – 1 |
| C337 | B – 2 |
| C338 | A – 1 |
| C345 | A – 2 |
| C3A0 | A – 3 |
| C3A1 | A – 2 |
| C3A2 | B – 2 |
| C3A3 | B – 2 |
| C3A9 | A – 3 |
| | |
| D301 | A – 1 |

| SYMBOL NO. | ADDRESS |
|---|---|
| D3A0 | A – 3 |
| | |
| IC201 | A – 5 |
| IC310 | A – 1 |
| | |
| L202 | A – 5 |
| L203 | B – 6 |
| L204 | A – 6 |
| L205 | A – 6 |
| L310 | A – 1 |
| L311 | A – 1 |
| L312 | A – 2 |
| | |
| Q201 | A – 4 |
| Q202 | B – 6 |
| Q203 | A – 6 |
| Q204 | B – 4 |
| Q205 | B – 5 |
| Q207 | A – 5 |
| Q208 | A – 6 |
| Q260 | B – 1 |
| Q261 | B – 1 |
| Q262 | B – 1 |
| Q310 | A – 1 |
| Q311 | A – 2 |
| Q312 | A – 2 |
| Q3A0 | A – 3 |
| Q3A1 | B – 2 |
| | |
| R200 | A – 5 |
| R201 | A – 5 |
| R202 | B – 5 |
| R203 | A – 5 |
| R204 | A – 4 |
| R205 | B – 6 |
| R206 | A – 5 |
| R207 | A – 5 |
| R208 | B – 6 |
| R209 | B – 6 |
| R210 | A – 6 |
| R211 | A – 5 |
| R212 | A – 6 |
| R213 | A – 5 |
| R214 | A – 5 |
| R215 | A – 6 |
| R216 | A – 6 |
| R217 | A – 5 |
| R218 | A – 5 |
| R220 | A – 5 |
| R221 | B – 6 |
| R222 | A – 6 |
| R223 | A – 5 |
| R224 | A – 5 |
| R225 | A – 5 |
| R226 | B – 4 |
| R227 | A – 5 |
| R228 | A – 5 |
| R230 | B – 5 |
| R231 | B – 5 |
| R265 | B – 1 |

| SYMBOL NO. | ADDRESS |
|---|---|
| R266 | B – 1 |
| R267 | B – 1 |
| R268 | B – 1 |
| R272 | B – 1 |
| R273 | A – 1 |
| R274 | A – 1 |
| R275 | B – 1 |
| R277 | B – 1 |
| R278 | A – 1 |
| R279 | A – 1 |
| R280 | A – 4 |
| R281 | A – 4 |
| R282 | A – 4 |
| R283 | A – 4 |
| R284 | A – 4 |
| R285 | A – 4 |
| R310 | A – 2 |
| R311 | A – 2 |
| R312 | A – 2 |
| R313 | A – 2 |
| R314 | A – 2 |
| R315 | A – 2 |
| R316 | A – 2 |
| R317 | B – 2 |
| R318 | B – 2 |
| R319 | B – 2 |
| R320 | B – 2 |
| R324 | B – 2 |
| R325 | B – 1 |
| R326 | A – 1 |
| R327 | A – 1 |
| R328 | B – 2 |
| R329 | B – 2 |
| R330 | A – 1 |
| R331 | A – 1 |
| R332 | A – 1 |
| R334 | A – 1 |
| R337 | A – 1 |
| R338 | A – 2 |
| R339 | A – 2 |
| R340 | A – 1 |
| R341 | A – 2 |
| R3A0 | A – 3 |
| R3A1 | A – 3 |
| R3A2 | A – 2 |
| R3A3 | B – 3 |
| R3A4 | B – 3 |
| R3A5 | B – 2 |
| R3A6 | A – 2 |
| | |
| RJ3 | B – 6 |
| RJ5 | A – 5 |
| RJ7 | B – 5 |
| RJ8 | B – 5 |
| RJ9 | B – 1 |
| RJ10 | B – 1 |
| RJ11 | B – 1 |
| RJ12 | A – 1 |
| RJ12 | A – 1 |
| RJ14 | B – 1 |

| SYMBOL NO. | ADDRESS |
|---|---|
| RJ15 | B – 1 |
| | |
| SW570 | B – 1 |
| | |
| T310 | A – 1 |
| | |
| TP9 | A – 4 |
| TP10 | A – 4 |
| TP11 | B – 4 |
| TP12 | B – 4 |
| TP13 | A – 4 |
| TP14 | A – 4 |
| TP40 | B – 4 |
| TP41 | B – 4 |
| TP42 | B – 4 |
| TP43 | B – 4 |
| TP44 | B – 4 |
| TP45 | B – 4 |
| TP46 | A – 2 |
| TP47 | A – 2 |
| TP48 | A – 2 |
| TP49 | A – 2 |
| TP50 | B – 1 |
| TP51 | B – 1 |
| TP52 | B – 1 |
| TP53 | B – 1 |
| TP54 | B – 1 |
| TP55 | B – 1 |
| TP56 | B – 1 |
| TP57 | B – 1 |
| TP58 | A – 2 |
| TP59 | A – 2 |
| TP2N | A – 5 |
| TP2H0 | B – 6 |
| TP2XY | A – 4 |
| TP3EF | A – 2 |
| | |
| VR203 | A – 5 |
| VR310 | A – 2 |

PCB-CONNECTOR〔Except V(SA)〕



| SYMBOL NO. | ADDRESS |
|---|---|
| R4E1 | D – 5 |
| R4E2 | E – 5 |
| R4E3 | E – 5 |
| R4E6 | D – 5 |
| R4E7 | D – 4 |
| R4E9 | D – 5 |
| R4F0 | C – 1 |
| R4F1 | C – 1 |
| R4F2 | D – 6 |
| R4F3 | D – 5 |
| R4S1 | D – 6 |
| R4S5 | D – 6 |
| R4S6 | D – 6 |
| R4S7 | D – 6 |
| R4S9 | D – 6 |
| R4T0 | E – 4 |
| R4T1 | E – 5 |
| R4T2 | D – 5 |
| R4T3 | D – 5 |
| R4Z4 | E – 6 |
| R5A0 | E – 1 |
| R5A1 | E – 1 |
| R5A2 | E – 1 |
| R5A3 | E – 1 |
| R5A5 | E – 3 |
| R5A6 | E – 3 |
| R5A7 | E – 3 |
| R5A8 | E – 3 |
| R5A9 | E – 3 |
| R5B0 | E – 3 |
| R5B1 | E – 1 |
| R5B2 | E – 1 |
| R5C3 | E – 6 |
| R5C4 | E – 6 |
| R5C5 | E – 6 |
| R5D0 | D – 5 |
| R5D1 | D – 5 |
| R5D2 | D – 2 |
| R5D3 | C – 4 |
| R5D4 | C – 2 |
| R5D5 | C – 2 |
| R5D6 | C – 2 |
| R5D8 | C – 2 |
| R5D9 | D – 3 |
| R5E0 | E – 3 |
| R5E1 | D – 2 |
| R5E2 | D – 2 |
| R5E3 | D – 2 |
| R5E4 | D – 2 |
| R5E5 | D – 2 |
| R5E6 | D – 1 |
| R5E7 | D – 1 |
| R5E8 | E – 3 |
| R5E9 | E – 3 |
| R5F0 | E – 3 |
| R5F1 | E – 3 |
| R5F2 | B – 6 |
| R5F3 | C – 5 |
| R5F4 | B – 4 |
| R5F5 | B – 4 |

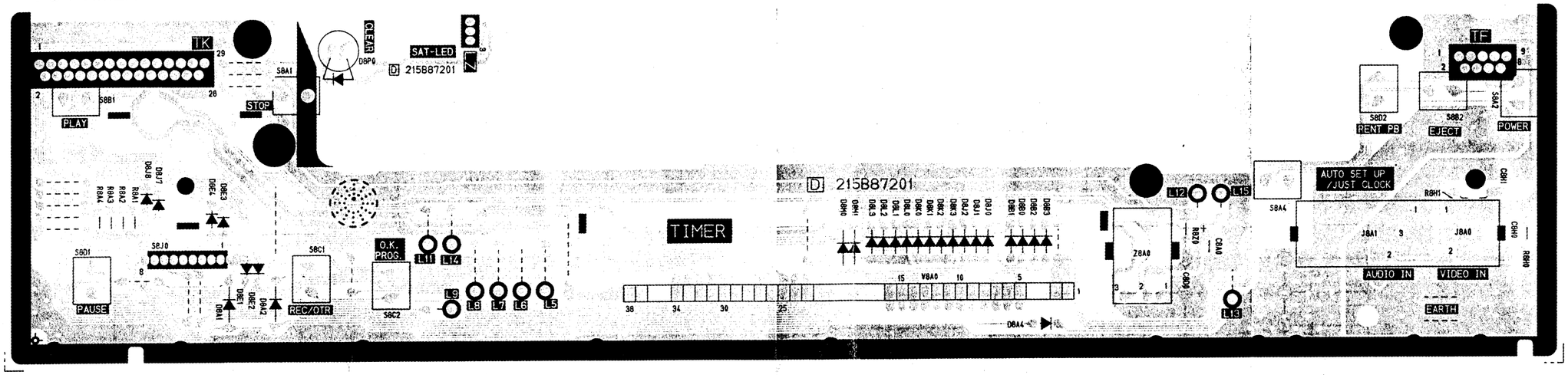
| SYMBOL NO. | ADDRESS |
|---|---|
| R5F6 | B – 4 |
| R5F7 | B – 4 |
| R5F8 | B – 4 |
| R5F9 | B – 4 |
| R5G0 | B – 4 |
| R5G1 | D – 4 |
| R5G3 | C – 4 |
| R5G4 | E – 3 |
| R5G5 | D – 1 |
| R5G6 | D – 6 |
| R5G7 | D – 1 |
| R5G9 | E – 1 |
| R5H0 | E – 1 |
| R5H1 | C – 4 |
| R5H2 | C – 2 |
| R5H3 | D – 2 |
| R5H4 | E – 6 |
| R5H5 | E – 6 |
| R5H6 | E – 4 |
| R5H7 | E – 4 |
| R5H8 | E – 4 |
| R5J0 | D – 3 |
| R5J1 | D – 2 |
| R5J2 | D – 5 |
| R5J3 | D – 5 |
| R5J4 | D – 4 |
| R5J5 | D – 3 |
| R5J6 | C – 1 |
| R5J7 | C – 3 |
| R5J8 | D – 2 |
| R5J9 | C – 3 |
| R5K0 | C – 1 |
| R5K2 | C – 1 |
| R5K3 | E – 1 |
| R5K5 | C – 4 |
| R5K7 | D – 3 |
| R5L0 | D – 3 |
| R5L1 | D – 1 |
| R5L2 | D – 1 |
| R5P0 | D – 1 |
| R5U8 | E – 3 |
| R5V0 | C – 6 |
| R5V1 | C – 6 |
| R5V2 | C – 6 |
| R5W5 | D – 1 |
| R5W6 | D – 6 |
| R5W9 | E – 4 |
| R5X0 | C – 2 |
| R5X1 | C – 4 |
| R5X4 | C – 4 |
| R5X6 | D – 3 |
| R5X7 | E – 1 |
| R5Y3 | E – 1 |
| R9A2 | D – 7 |
| R9A3 | D – 7 |
| R9A4 | D – 7 |
| R9A5 | D – 6 |
| R9A6 | D – 7 |
| R9A8 | D – 6 |
| R9A9 | D – 6 |

| SYMBOL NO. | ADDRESS |
|---|---|
| R9B0 | D – 6 |
| R9B1 | C – 6 |
| R9B3 | D – 6 |
| R9B4 | D – 6 |
| R9B5 | D – 7 |
| R9B6 | E – 7 |
| R9B7 | D – 7 |
| R9B8 | D – 7 |
| R9B9 | E – 7 |
| R9C0 | E – 7 |
| R9C1 | E – 7 |
| R9C2 | D – 7 |
| R9C3 | E – 7 |
| | |
| RJ101 | A – 2 |
| RJ102 | A – 2 |
| RJ103 | A – 1 |
| RJ104 | B – 1 |
| RJ105 | A – 1 |
| RJ106 | C – 1 |
| RJ107 | A – 2 |
| RJ201 | A – 4 |
| RJ202 | B – 5 |
| RJ203 | A – 4 |
| RJ204 | A – 4 |
| RJ205 | A – 4 |
| RJ206 | B – 5 |
| RJ207 | A – 4 |
| RJ208 | A – 3 |
| RJ209 | B – 3 |
| RJ210 | A – 4 |
| RJ211 | B – 5 |
| RJ401 | D – 6 |
| RJ402 | D – 6 |
| RJ403 | E – 5 |
| RJ404 | E – 5 |
| RJ405 | D – 4 |
| RJ406 | D – 5 |
| RJ407 | D – 5 |
| RJ408 | D – 6 |
| RJ501 | C – 4 |
| RJ502 | B – 3 |
| RJ503 | B – 3 |
| RJ504 | C – 3 |
| RJ505 | C – 3 |
| RJ506 | D – 3 |
| RJ507 | C – 1 |
| RJ508 | C – 1 |
| RJ509 | D – 1 |
| | |
| S101 | A – 2 |
| S5A0 | E – 6 |
| S5A1 | A – 1 |
| | |
| SF101 | A – 1 |
| SF102 | A – 1 |
| | |
| T901 | B – 6 |
| | |
| TP01 | B – 1 |

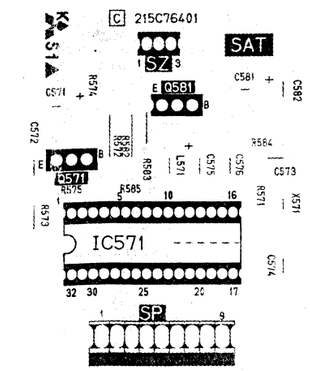
| SYMBOL NO. | ADDRESS |
|---|---|
| TP02 | B – 1 |
| TP04 | B – 1 |
| TP11 | A – 1 |
| TP12 | B – 2 |
| TP13 | B – 2 |
| TP14 | B – 1 |
| TP15 | A – 1 |
| TP16 | B – 2 |
| TP21 | A – 2 |
| TP53 | C – 4 |
| TP108 | E – 4 |
| TP109 | E – 3 |
| TP110 | E – 4 |
| TP1A | A – 1 |
| TP1C | B – 1 |
| TP1E | A – 1 |
| TP1S | A – 2 |
| TP1V | B – 2 |
| TP2A | B – 4 |
| TP2B | A – 5 |
| TP2H | B – 4 |
| TP2J | A – 2 |
| TP2M | B – 4 |
| TP2N | B – 4 |
| TP2S | B – 5 |
| TP5A | E – 1 |
| TP5B | D – 1 |
| TP5C | C – 1 |
| TP5D | C – 2 |
| TP5F | C – 2 |
| TP5X | D – 4 |
| TP5Y | D – 3 |
| TP9A | A – 3 |
| TP9B | B – 1 |
| TP9C | C – 1 |
| TP9Z | E – 6 |
| TP1G1 | A – 1 |
| TP1G2 | A – 1 |
| TP1G3 | B – 1 |
| TP1G4 | B – 1 |
| TP2AH | B – 4 |
| TP2C0 | A – 5 |
| TP2C1 | B – 5 |
| TP2C6 | A – 5 |
| TP2C7 | B – 5 |
| TP2G1 | A – 2 |
| TP2G2 | A – 2 |
| TP2G3 | A – 2 |
| TP2G4 | A – 4 |
| TP4C0 | D – 4 |
| TP4C1 | D – 5 |
| TP4C2 | D – 5 |
| TP4D1 | D – 5 |
| TP4D2 | D – 5 |
| TP4F1 | D – 5 |
| TP4G1 | D – 4 |
| TP4M1 | D – 5 |
| TP5J0 | D – 6 |
| TP5J1 | E – 1 |
| TP5J2 | E – 1 |

| SYMBOL NO. | ADDRESS |
|---|---|
| TP5J3 | E – 1 |
| TP5J4 | E – 1 |
| TP5J5 | D – 3 |
| TP5J6 | B – 4 |
| TP5J7 | E – 3 |
| TP5J8 | D – 3 |
| TP5J9 | D – 3 |
| TP5K0 | C – 4 |
| TP5K3 | D – 1 |
| TP5K4 | E – 6 |
| TP5K5 | C – 5 |
| TPGND | B – 4 |
| TPSAT | A – 2 |
| TPSAT | C – 1 |
| TPRESET | A – 1 |
| TPRESET | C – 1 |
| TPVSYNC | C – 4 |
| | |
| TU01 | A – 1 |
| | |
| VR101 | B – 1 |
| VR5A0 | E – 1 |
| | |
| X501 | B – 3 |
| X2A0 | A – 4 |
| X4A0 | D – 6 |
| X5A0 | C – 2 |
| X5A1 | D – 2 |

## PCB-TIMER

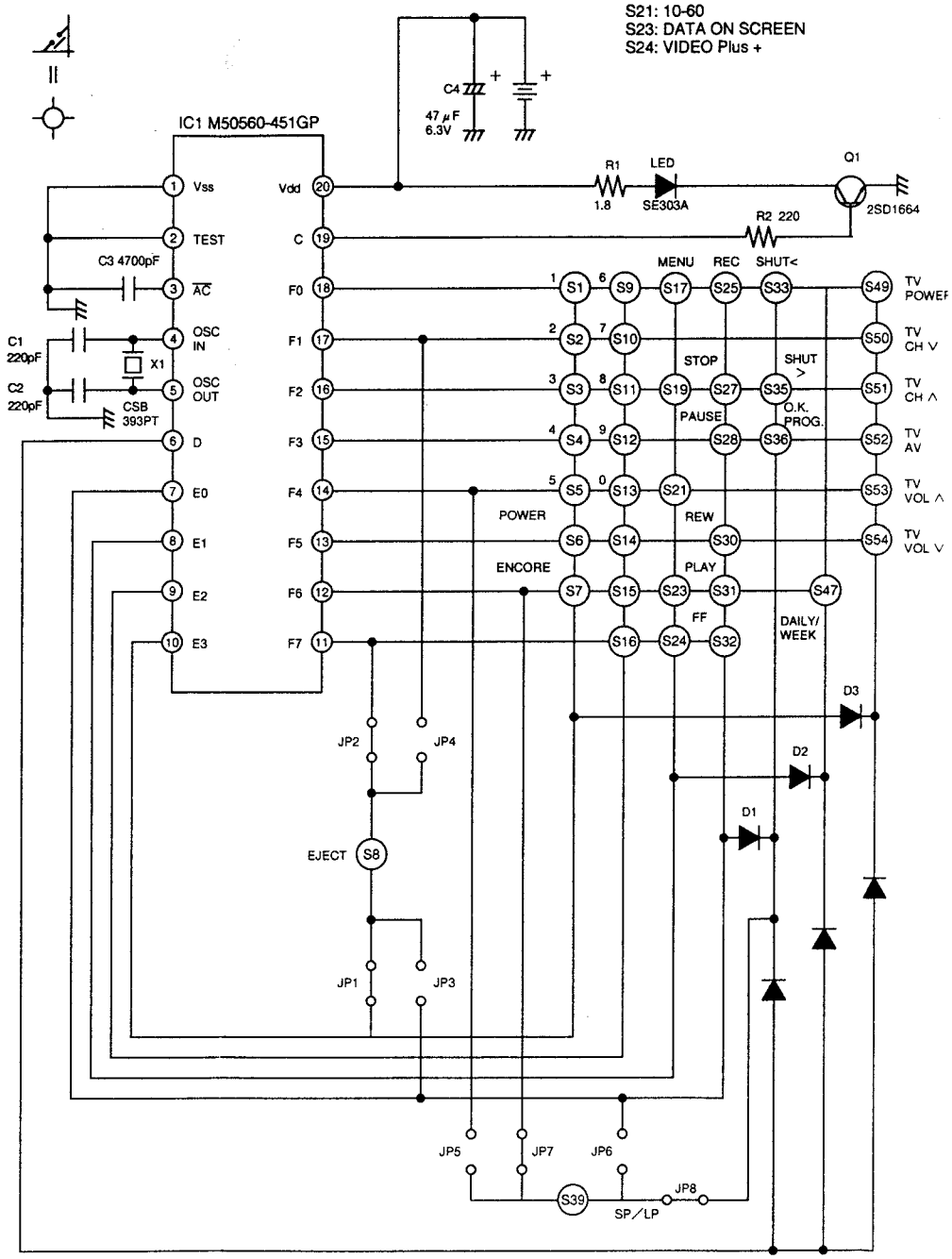



## PCB-SAT



## HS-521V(B)/V(IR),HS-541V(SA)
## TRANSMITTER REMOTE CONTROL

S14: CANCEL
S15: JOG/CHANNEL -
S16: JOG/CHANNEL +
S19: CT-RES/NEXT
S21: 10-60
S23: DATA ON SCREEN
S24: VIDEO Plus +



HS-541V(B)/V(E)/V(G)/V(IR)/V(Y)

# TRANSMITTER REMOTE CONTROL